THE REVIEW

OF

APPLIED MYCOLOGY

Vol. XVIII

ISSUED BY THE IMPERIAL
MYCOLOGICAL INSTITUTE

THE IMPERIAL MYCOLOGICAL INSTITUTE
KEW, SURREY

1939

All Rights Reserved

IMPERIAL MYCOLOGICAL INSTITUTE

EXECUTIVE COUNCIL

F. J. DU TOIT, *Chairman*, South Africa

Dr. WILLIAM ALLEN, *Vice-Chairman*, Canada

Sir DONALD FERGUSSON, K.C.B., United Kingdom

F. L. MCDOUGALL, C.M.G., Australia

NEVILL L. WRIGHT, F.I.C., D.I.C., New Zealand

J. M. ADAMS, F.R.C.Sc.(I), Eire

D. JAMES DAVIES, C.B.E., Newfoundland

SHAMALDHARI LAL, I.C.S., India

B. F. WRIGHT, Southern Rhodesia

SHAMALDHARI LAL, I.C.S., Burma

J. A. CALDER, C.M.G., Colonies, Protectorates, and Mandated Territories

Secretary: Sir DAVID CHADWICK, K.C.M.G., C.S.I., C.I.E.

STAFF

Director and Editor
S. P. WILTSHIRE, M.A., D.Sc.

Assistant Director and Sub-Editor
H. A. DADE, A.R.C.S.

Mycologist
E. W. MASON, M.A., M.Sc.

Senior Assistant Mycologist
G. R. BISBY, Ph.D.

Assistant Mycologist
G. C. AINSWORTH, B.Sc., Ph.D.

PRINTED IN GREAT BRITAIN AT THE UNIVERSITY PRESS, OXFORD
BY JOHN JOHNSON, PRINTER TO THE UNIVERSITY

ERRATA

VOLUME XVI

page 561 line 45 for '*Typha elephantina*' read '*Pennisetum purpureum*'
572 33 for '*Leucaena pulverulenta*' read '*Albizzia jubibrissin*'

VOLUME XVIII

2 46 for 'Lumber' read 'Limber'
40 32 for 'Noak' read 'Noack'
73 22 for '*P. strobi* (*C. ribicola*),' read 'and *P. strobi* (*C. ribicola*).'
89 39 for '(*Amomum subulatum*)' read '[*Elettaria cardamomum*]'
137 1 for 's'Jacob (S. C.)' read 's'Jacob (J. C.)'
170 47 for '*U. panici-miliacei*' read '*Sphacelotheca sorghi*'
48 for '*Panicum miliaceum*' read '*Sorghum* sp.'
178 8 for '*potroni*' read '*potronii*'
233 32 for '*Amomum subulatum*' read '*Elettaria cardamomum*'
35 for '*Elletaria cardamomum*' read '*Amomum subulatum*'
270 33 for '*Acerotagallia*' read '*Aceratagallia*'
274 15 for '*Typha elephantina*' read '*Pennisetum purpureum*'
284 21 for 'Garren (K. M.).' read 'Garren (K. H.).'
315 10 for '*fasciculatis*' read '*fasciculatus*'
14 insert 'n.sp.' after '*humuli*'
40 for '*oyxsporum*' read '*oxysporum*'
321 23 for '(?) *copallina*' read '*glabra*'
379 47 for 'xvii' read 'xviii'
389 21 insert 'subsequent' before 'appearance'
23 for 'and the first pustules' read 'but pustules subsequently'
446 10 for '*Bacterium*' read '*Bacterium tumefaciens*'
452 9 for 'xiv' read 'xvi'
468 46 for 'xii' read 'xxii'
487 13 for 'Davidson (W.)' read 'Davidson (R. W.)'
504 43 for '*juranum*' read '*juruanum*'
506 5 for 'Eastern' read 'Easter'
517 23 for '*ehrenbergi*' read '*ehrenbergii*'
36 for '444' read '472'
523 22 for '*ectoendothrix*' read 'ecto-endothrix type'
34 for '*endoectothrix*' read 'ecto-endothrix type'
533 8 for '*J.*' read '*G.*'
551 42 delete '*claytoniana*'
573 4 for 'are' read ', one'
625 32 for '*Himatia*' read '*Himantia*'
655 35 for '*hypolaterita*' read '*hypolateritia*'
689 4 for 'perithecia' read 'conidia'
726 19 for '43' read '431'
792 6 for 'increased' read 'decreased'
822 14 for '*Elettaria cardamomum*' read '*Amomum subulatum*'

INDEX OF AUTHORS

PAGES

Abbott, E. V. 203, 344, 618, 619
Abe, T. 790
Aberastury, M. 178
Adam, D. B. 121, 152
Adams, J. 595
Adams, W. E. 384
Afanasiev, M. M. 52
Aggéry, B. 779
Ainsworth, G. C. 182, 607, 649, 754, 783
Airola, E. V. 773
Ajroldi, R. 49
Akai, S. 528
Albert, A. R. 52, 200
Alberti, K. 775
Alcorn, G. D. 342
Alexopoulos, C. J. 129
Allan, F. E. 14
Allan, J. G. 341
Allan, J. M. 63
Allen, P. J. 14, 171
Allington, W. B. 266
Allison, J. L. 742
Altstatt, G. E. 421
Alvarado, J. A. 124
Ambrosioni, P. 108, 254
Anagnostopoulos, P. T. 125, 672
Anant Narayan Rao, M. 454
Anderson, O. C. 323
Andrén, F. 605
Andrewes, C. H. 44
Andrews, F. W. 23, 390
Andrus, C. F. 82
Angell, H. R. 14, 63
Anliker, J. 227
Arenz, B. 307
Argenziano, G. 311
Ark, P. A. 151, 427, 488, 497, 684, 740
Arnaud, G. 826
Arnett, R. 129
Aronescu-Săvulescu, A. 740
Arruda, S. C. 222, 353
Artemieva, Z. S. 422, 495
Askew, H. O. 117
Asnitzkaya, E. A. 698
Asuyama, H. 383
Atkins, W. R. G. 334
Atkinson, J. D. 117, 118
Atkinson, H. J. 64
Atkinson, R. E. 619
Azzaroli, F. 213

Bailey, R. M. 723
Bain, H. F. 123
Baines, R. C. 807
Baker, R. D. 252
Baker, R. E. D. 193, 308, 450, 671, 808
Baldacci, E. 521, 526, 543, 626, 756
Ball, W. C. 255
Ballard, E. 11
Balls, A. K. 205
Banga, O. 398
Baptist, E. D. C. 816
Barker, S. G. 527
Barmenkoff, A. S. 585

PAGES

Barnell, H. R. 747
Barnett, W. L. 328
Barrentine, B. F. 529
Barrett, J. 644
Barrett, J. T. 151
Barss, H. P. 265
Barthelet, J. 324, 757
Baudyš, E. 436
Bauer, R. 402
Baur, K. 603
Bavendamm, W. 360
Bawden, F. C. 44, 60, 126, 143, 405, 415, 540, 756
Baxter, D. V. 642
Bayles, B. B. 660
Beachley, K. G. 194
Beattie, R. K. 537
Beaumont, A. 30, 653
Beck, E. C. 162
Becker, H. 412
Bedi, K. S. 85
Beeley, F. 272, 342, 816
Been, W. G. 757
Beilin, I. G. 446
Békésy, N. v. 314
Belenky, D. E. 378
Bell, A. F. 274
Bennett, C. W. 606
Bennett, F. T. 446, 565
Berberian, D. A. 179
Beregovoy, P. 611
Berger, G. 66, 83, 289
Bergman, H. F. 694
Bernal, J. D. 44, 126, 353
Bernon, G. 571, 724
Berry, W. E. 750
Bertleff, V. 830
Bertram, L. 474
Bescher, R. H. 830
Best, R. J. 556, 606
Bever, W. M. 583
Beyers, E. 805
Bidwell, C. B. 280
Bier, J. E. 770
Bigatti, A. 594
Billeau, A. 782
Biraghi, A. 466, 561
Bisby, G. R. 414, 761
Bitancourt, A. A. 59, 101, 346, 452, 624, 672
Björling, K. 684
Bjørnekær, K. 215
Black, L. A. 395
Black, L. M. 270, 540
Blackford, F. W. 19, 537
Blair, D. S. 191
Blair, I. D. 94
Blair, W. S. 429
Blaisdell, D. J. 356, 360
Blattný, C. 382, 464
Bliss, D. E. 104, 451
Blockówna, H. 155
Blodgett, E. C. 745
Blodgett, F. M. 259, 612
Bloemen, J. J. 178

	PAGES
Blokhuis, J. L. W.	74
Blood, H. L.	485, 765, 824
Blumer, S.	139, 185
Blunck, H.	107, 468, 676
Bocharova, Z. Z.	467
Bockmann, H.	586
Boczkowska, M.	107
Bode, H. R.	371
Bodnár, J.	194
Bøe, J.	591
Boedijn, K. B.	27, 629
Boers, E. R. J.	455
Boewe, G. H.	164, 511, 670
Bohn, G. W.	766
Bojanovsky, R.	45
Boken, E.	668
Bondartzeff, A. S.	356
Bonde, R.	613
Böning, K.	245, 292, 365
Bonnemaison	292
Bordukova, M. W.	135
Boresch, K.	39
Borzini, G.	71, 203, 362, 498
Bosc, M.	10
Bose, R. D.	181, 293
Bose, S. R.	341, 829
Botjes, J. G. O.	269, 411
Bouget, J.	341
Bouriquet, G.	11, 548, 652
Boyd, O. C.	532
Boyes, W. W.	804, 806
Bozovaisky, L.	480
Branas, J.	86, 294, 436, 571, 652
Brandenburg, E.	428
Brandwein, P. F.	243
Bratley, C. O.	35, 748
Braun, H.	199, 340
Brecht, W.	220
Briant, A. K.	124
Brien, R. M.	55, 726
Brierley, P.	317
Briggs, F. N.	515
Brixhe, A.	248, 797
Brody, H. W.	686
Bronner, G.	721
Brooks, C.	227
Brooks, F. T.	597
Brooks, T. E.	374
Brown, B. E.	201
Brown, H. D.	6
Brown, H. P.	746
Brown, J. G.	20, 392
Brown, N. A.	446
Bryan, J.	830
Buchanan, T. S.	72, 149, 216
Buchholtz, W. F.	5
Buchwald, N. F.	1, 711, 826
Bucksteeg, W.	401, 534
Buddin, W.	30, 183
Buller, A. H. R.	414
Burger, F. W.	71
Burges, A.	708
Burkholder, W. H.	53, 257
Burnett, L. C.	99, 242
Burns, M. M.	103, 641
Burr, S.	201
Bustarret, J.	13, 304, 305, 338
Butler, E. J.	468
Butler, K. D.	20, 781
Cabrera, A. G.	506
Caldwell, J. T.	454
Caldwell, R. M.	299
Calinisan, M. R.	30, 255, 256, 801
Calland, J. W.	721
Callen, E. O.	74
Calvino, E. M.	739
Caminha, A.	345
Camp, A. F.	518, 672
Campbell, A. H.	218, 615
Campbell, J. A.	111
Campbell, M. E.	137
Campbell, W. A.	145, 360, 487
Capurro, J.	594
Carneiro, J. G.	265
Carol, W. L. L.	178
Carrante, V.	245, 307
Carsner, E.	150
Carswell, T. S.	5
Carter, J. C.	67, 424
Carter, W.	465, 697
Cartwright, K. St. G.	26, 76, 361, 479
Carvajal Barahona, F.	589
Carvalho, J. C.	633
Castel, P.	10
Castellani, A.	108
Castellani, E.	22, 95, 185, 519, 693
Castelli, T.	26
Castellino, P. G.	311
Castello, V. P.	593
Catanei, A.	27, 177, 522, 678
Cation, D.	691
Cavallero, C.	394, 525
Cayley, D. M.	8
Celino, M. S.	396, 626, 709
Černik, L. F.	414
Chamberlain, E. E.	648
Chapman, A. D.	284
Charles, V. K.	252, 461, 712
Cheo, C. C.	552
Chester, K. S.	105, 663
Chesters, C. G. C.	802
Chevalier, R.	13, 304, 305, 338
Chiarugi, A.	754
Childers, N. F.	686
Childs, J. F. L.	128
Childs, T. W.	216
Ch'in, T. L.	110
Chistiakoff, F. M.	467
Chistoserdova, G. V.	445
Chittenden, E.	117
Christiansen, R. M.	765
Christoff, A.	188, 189, 712, 745
Christopher, E. P.	695
Christova, E.	712
Chrzanowski, A.	365
Chucka, J. A.	201
Churchward, J. G.	168
Ciferri, R.	26, 28, 58, 124, 395, 524, 525, 526, 781
Clark, C. F.	339, 544
Clark, J. H.	692
Claus, E.	287
Clayton, E. E.	417
Clerkin, P.	180
Clouston, T. W.	390, 796
Cochet, G.	593
Cochran, L. C.	260, 744
Cockerham, G.	407

	PAGES
Coffman, F. A.	99, 242, 243
Coleman, O. H.	258
Colleary, M. J.	492
Colwell, W. E.	745
Comandon, J.	251
Compton, L. E.	299
Conners, I. L.	200, 724
Constantinesco, M.	445
Constantinesco, T.	445
Cook, H. T.	368, 475, 565
Cook, M. T.	197, 229
Cook, R. L.	77
Cooley, J. S.	79, 321
Coons, G. H.	566
Cordon, T. C.	342, 476, 567, 570
Cornoldi, G.	588
Costa, A. S.	202, 520, 798
Couch, J. N.	59, 809
Craigie, J. H.	467
Cralley, E. M.	106, 815
Crandall, B. S.	537
Cremer, G.	178
Crépin, C.	13, 304, 305, 338, 372
Cristinzio, M.	330, 355
Croft, C. C.	395
Crosier, W.	495
Crous, P. A.	796
Croxall, H. E.	778
Cummins, G. B.	2
Cunningham, G. H.	234, 695
Cunningham, H. S.	611
Curtis, J. T.	801
Da Câmara, E. M. de S.	711
D'Aeth, H. R. X.	609
Dahlberg, H. W.	831
Dalgliesh, C. S.	364
Da Luz, C. G.	711
Dameron, W. H.	810
Dana, B. F.	84
Dang-Van-Ngu	800
Darbellay, J.	424
Darkis, F. R.	417, 418
Das Gupta, S. N.	329
Dastur, J. F.	372
David, R.	255, 393, 522, 678
Davidson, R. W.	145, 147, 321, 360, 487
Davies, D. L. G.	760
Davies, G. N.	93
Davies, R.	804
Davis, M. B.	191
Davis, W. H.	682
Daxer, H.	536
Day, W. R.	282, 825
Deacon, G. E.	528
Dearness, J.	112, 414
De Bruyn, H. L. G.	777
De Busscher, J.	456
Decker, J. J.	592
Decker, P.	412
Decoux, L.	78, 287
De Fluiter, H. J.	136, 137, 452, 546
De Fonbrune, P.	251
De Haan, I.	281
Deighton, F. C.	156
Della Beffa, G.	572
Delwiche, E. J.	777
Demaree, J. B.	123
De Mesa, A.	489
Deml, H.	545
Dennis, A. C.	613
Dennis, R. W. G.	410, 613
Denny, F. E.	135
Derzhavin, A. I.	661
Desai, M. K.	518
Descazeaux, J.	520, 675
Deschiens, R.	310, 675
De Verebély, T.	110
De Villafañe Lastra, T.	527
De Villiers, D. J. R.	804
Dey, N. C.	594
Diachun, S.	450
Dick, J. B.	105, 106
Dickson, E. C.	179, 394
Dickson, G. H.	187
Diddens, H. A.	525
Diehl, R.	610
Diehl, W. W.	683
Di Micheli, G.	458
Dimitrieva, T. I.	666
Dionigi, A.	167
Dippenaar, B. J.	496
Dodge, B. O.	404
Doerr, R.	605
Doidge, E. M.	103, 112
D'Oliveira, B.	387, 666
D'Oliveira, M. de L.	825
Donald, C. M.	163
Doolittle, S. P.	824
Dopp, E.	343, 618
Doran, W. L.	181
Dorokhoff, L. M.	352
Dorst, J. C.	268
Doudina, V. S.	488
Dounin, M. S.	377
Dowding, E. S.	393
Dowson, W. J.	658
Doxtator, C. W.	777
Doyer, L. C.	265
Dragišić, B.	111
Drayton, F. L.	820
Drechsler, C.	454, 650, 798
Drefahl, L. C.	650, 830
Duchoň, F.	382
Dufrénoy, J.	59, 65
Dunegan, J. C.	322
Dunlap, A. A.	389
Du Plessis, S. J.	231, 232, 498
Durham, O. C.	108, 254
Durrell, L. W.	6, 165
Duthie, D. W.	104
Dykstra, T. P.	50, 337
Eastwood, H. W.	327
Ebeling, W.	19
Eddins, A. H.	473
Edgerton, C. W.	366, 617
Edney, L. E.	565
Edwards, W. D.	402
Ehrke, G.	604
Ekstrand, H.	34, 298
El Alaily, Y. A. S.	597
Elford, W. J.	126
El-Helaly, A. F.	567
Eliason, E. J.	2
Elisei, F. G.	54, 114, 140
Elliott, C.	449
Ellis, D. E.	772

	PAGES
El Nasr, A. El G. S.	170
Elssmann, E.	603
Emmons, C. W.	737
Endô, S.	205
Endrigkeit, A.	541
Englund, B.	774
Epstein, N. N.	394
Epstein, S.	313
Esau, K.	198
Esbjerg, N.	118
Escherich, K. L.	487
Eschkilsen, L. W.	720
Evlakhova, A. A.	380
Ezekiel, W. N.	106
Fankuchen, I.	353
Farkas, A.	101
Farness, O. J.	800
Farrell, M. A.	553, 764
Faull, J. H.	491, 551
Fawcett, G. L.	237, 248, 338
Fawcett, H. S.	100, 248, 450, 671
Fedorintchik, N. S.	580
Fedotova, T. I.	127
Feiginson, N. I.	699
Felix, E. L.	367
Fellows, H.	585
Ferdinandsen, C.	212, 717
Fernando, M.	273, 420, 422, 432
Ferraris, T.	113
Ferrer, R. B.	124
Fiala, F.	437
Ficke, C. H.	585
Fife, J. M.	77
Fikry, A.	120
Findlay, G. M.	126
Findlay, W. P. K.	76, 221, 361, 829
Fischer, G. W.	665, 732
Fischer, H.	3
Fish, S.	744
Fisher, E. E.	626
Fittschen, H. H.	514
Flachs, K.	779
Foëx, E.	372
Fokin, A. D.	583
Forbes, I. L.	621, 793
Forster, R.	520
Foster, E. P.	264, 327
Foster, J. W.	336, 609
Fourmont, R.	77
Fowler, M. E.	148
Fox, D. E.	223
Fraenkel, E. M.	109
Fraga, C. C.	798
Frampton, V. L.	714
Francis, C. B.	477
Franco, R. M.	12
Franke, W.	299
Fransen, J. J.	557
Fraser, P. K.	677
Fraser, W. P.	414
Freitag, J. H.	369
Fresa, R.	532
Freyfeld, E. E.	644
Frickhinger, H. W.	586
Friedrich, G.	37
Fries, N.	335
Fröier, K.	665
Fron, G.	292, 719
Fryer, J. C. F.	694
Fuchs, W. H.	195
Fukushi, T.	600, 613
Gadd, C. H.	712, 713
Gadd, I.	515
Gaines, J. G.	417
Gallotti, M.	124, 781
Gammel, J. A.	312
Garassini, L. A.	595
Garbowski, L.	50, 661
Gardner, M. W.	364
Garrard, E. H.	50
Garren, K. H.	219, 284, 561
Garrett, O. A.	820
Garrett, S. D.	171, 386, 476, 808
Garrod, L. P.	44
Gassner, G.	299, 301, 302, 303
Gaudineau, M.	688, 806
Gaul, F.	97
Gäumann, E.	357, 493
Gemmell, A. R.	318, 390
Gerhardt, F.	691
Ghatak, P. N.	175
Ghesquière, J.	21
Gibbs, J. G.	82, 222, 645
Giddings, N. J.	756
Gieger, M.	529
Gier, L. J.	46
Gifford, M. A.	179
Gigante, R.	528
Gilfinnan, C.	593
Gillespy, T. G.	191
Gingrich, N. S.	479
Giordano, A.	395
Glasscock, H. H.	295, 818
Glennie, A. E.	196
Glynne, M. D.	448, 808
Goddard, D. R.	14, 171
Goddard, M.	511
Godfrey, G. H.	739
Godoy, E. F.	555
Goidànich, G.	213, 362, 517, 524
Goldin, M. I.	62, 348
Goldsworthy, M. C.	38, 259, 806
Gonçalves, R. D.	401
Goodey, T.	251
Goodwin, C. P.	592
Goss, R. W.	52
Gosset, A.	380
Gösswald, K.	735
Gottlieb, M.	781
Gračanin, M.	499
Graham, V. E.	448
Grainger, J.	630
Gram, E.	385
Grant, T. J.	558
Gratia, A.	697
Gratz, L. O.	482
Greathouse, G. A.	24
Greco, N. V.	594
Green, D. E.	31
Green, E. L.	806
Greenberg, L.	448
Greenfield, J. G.	456
Greenhill, A. W.	646
Gregory, G. B.	604
Gregory, P. H.	32, 598
Grenierboley, J.	678

	PAGES
Gretschushnikoff, A. I.	271
Grieve, B. J.	789
Griffith, A. L.	818, 819
Grigoraki, L.	255, 393, 522, 678
Grigsby, B. H.	325
Grillo, H. V. S.	619
Grooshevoy, S. E.	635
Gross, P. M.	417, 418
Groves, J. W.	761, 820
Guard, A. T.	30
Guba, E. F.	142, 353, 769
Guerra, P.	253, 592
Guggisberg, H.	763
Guillochon	514
Guillot, G.	591
Gumaer, W.	63
Gunche, F. F.	594
Haasis, F. A.	680
Habibi	593
Haddon, C. B.	24
Haddow, W. R.	73
Hadert, H.	150
Haenseler, C. M.	567, 588
Hahn, G. G.	772
Haley, D. E.	553, 764
Hallauer, C.	605
Hanna, W. F.	665
Hansen, A.	809
Hansen, H. R.	386
Hansford, C. G.	575
Hansing, E. D.	11
Hara, Y.	522
Harding, D.	199
Harley, C. P.	687
Harley, J. L.	2
Harris, L. H.	679, 737
Harris, R. G.	553
Harrison, A. L.	421, 465
Hart, L.	460
Harter, L. L.	81, 609
Hartley, C.	145
Hartmann, O.	591
Hashioka, Y.	84
Hasimoto, A.	152
Hassebrauk, K.	730, 731
Hastings, J. D.	272
Häusermann, E.	119
Hayashi, T.	707
Hearman, J.	643
Hedges, F.	497
Heim, R.	548
Heinicke, A. J.	685
Heintzeler, I.	610
Heinze, K.	132, 197, 472, 813
Hellinger, E.	263
Hely, F. W.	14
Hemmi, T.	430, 718
Hendershott, W. E.	93
Hendrick, J. O.	190, 291
Hendrickx, F. L.	506
Henrici, A. T.	109, 679
Henry, A. W.	111
Hepting, G. H.	284, 719
Hérisson-Laparre, E.	476
Herrick, J. A.	718
Herschler, A.	435
Hervey, G. E. R.	695
Herzog, G.	708
Hesse, C. O.	690
Heubel, G. A.	728
Heuberger, J. W.	538
Hewitt, W. B.	120, 262, 289, 370, 533, 534, 689
Hickman, C. J.	778, 802, 808
Higgins, B. B.	236
Higuti, T.	387
Hilborn, M. T.	821
Hildebrand, A. A.	747
Hildebrand, E. M.	38, 334, 399, 401, 536, 686
Hill, A. V.	63
Hill, L. M.	53, 475
Hindmarsh, W. L.	460
Hino, I.	151, 204, 467
Hirai, T.	40, 264
Hirane, S.	458, 489
Hirata, K.	58
Hiratsuka, N.	141, 204
Hirayama, S.	4
Hirschhorn, E.	710
Hirt, R. R.	2
Hoerner, G. R.	548
Höfer, H.	751
Hoffmann, W.	666
Holbert, J. R.	517
Hollaender, A.	737
Holmes, F. O.	62, 607
Holz, W.	462, 530, 531
Hopkins, J. C. F.	347, 483, 604, 631, 784
Hopp, H.	69
Hoppe, P. E.	17, 669
Hopper, M. E.	310, 394
Hornbostel, W.	381, 382, 453
Horsfall, J. G.	332, 351, 404, 465, 538, 695
Howell, A.	456
Huber, G. A.	190, 603, 747
Huber, Z.	232
Hubert, E. E.	285
Huelin, F. E.	102
Huelsen, W. A.	556
Hughes, C. G.	624, 710
Hulpoi, W.	476
Hülsenberg, H.	649
Humphrey, H. B.	99, 242 299
Hungerford, C. W.	296
Hunt, G. M.	150, 563
Hunt, W. H.	18
Husz, B.	534
Hutchins, H. L.	173
Hutchins, L. M.	260, 322, 323
Hwang, L.	246
Hyde, E. O. C.	186, 601
Hynes, H. J.	113, 637
Hynes, K. E.	800
Ikata, S.	98
Ikeda, Y.	742
Ikeya, J.	718
Imazeki, R.	712
Imura, J.	272
Ingold, C. T.	405
Inoue, Y.	708
Isaac, W. E.	806
Isakova, A. A.	128
Isenbeck, K.	195

	PAGES
Israilski, V. P.	445
Itzerott, D.	18, 396
Ivanoff, S. S.	367
Iwata, Y.	86
Jaeger, F. M.	126
Jagger, I. C.	85, 151
Jahnel, H.	292, 758
Jakl, J.	455
James, N.	614
Jameson, D. H.	702
Jaworski, J.	521
Jenkins, A. E.	59, 71, 355, 422, 718
Jenkins, W. A.	571
Jensen, J. H.	375
Jewett, F. L.	350
Joëssel, P. H.	35
Johann, H.	307
Johnpulle, A. L.	433
Johnson, E. M.	764
Johnson, J.	348, 715
Johnston, C. O.	11, 94, 299, 374, 664
Jolivette, J. P.	366
Jones, F. R.	35, 320
Jones, G. H.	170
Jones, L. H.	184
Jones, W. N.	283
Jørgensen, A.	809
Jørgensen, C. A.	212, 717, 772
Jørstad, I.	559
Joulia, P.	739
Joyce, R.	563
Jump, J. A.	217
Juul, J. G.	559
Kaczmarek, A.	372
Kalandra, A.	490
Kallenbach, F.	426
Kamat, M. N.	368
Kambayashi, T.	252, 524
Kanivets, I. I.	817
Kapustina, E. I.	256
Karakoulin, B. P.	720
Kara-Mourza, L.	698
Karling, J. S.	107
Kasai, M.	828
Katser, A.	485, 486
Kaufert, F.	4
Kaufmann, C.	811
Kausche, G. A.	209, 210, 211, 266, 481, 543, 556, 714, 715, 763, 810
Kavanagh, F.	268
Kawai, I.	98, 719
Kaye, H.	29
Kearns, H. G. H.	538
Keay, M. A.	628
Keiller, P. A.	713
Kekwick, R. A.	143
Kelley, W. H.	677
Kent, G. C.	2
Kern, F. D.	141
Kernkamp, M. F.	670
Kessel, J. F.	527
Kessler, W.	602
Kesteven, H. L.	176
Keuchenius, A. A. M. N.	578
Keyworth, W. G.	709
Khan, H.	675
Khilimonova, V. I.	587
Khrobrykh, N. D.	378
Khudyakoff, Y. P.	659
Khudyna, I. P.	631
Kidd, F.	116
Kiehl, J.	202
Kienholz, J. R.	463
Kienholz, R.	280
Killian, C.	113
Kimmey, J. W.	216
Kincaid, R. R.	482
King, C. J.	520
King, M. E.	464
Kinman, C. F.	330
Kiryu, T.	626
Klebahn, H.	73, 644
Klemm, M.	318, 436, 684
Kletschetoff, A. N.	137
Klinkowski, M.	599
Klotz, L. J.	19, 100, 246, 450
Knight, R. L.	796
Knowles, N. R.	180
Koch, L. W.	823
Kochman, J.	457, 552
Koehler, B.	173, 517
Köhler, E.	50, 133, 196, 339, 409, 472, 543, 810, 813
Kokin, A. J.	250
Komarova, A.	600
Komirna, O. M.	616
Komiya, S.	546
Kondratieva, S. M.	698
Koning, H. C.	67
Konstantinia-Sulidu, A.	762
Koratchevsky, I. K.	699
Koser, S. A.	335
Kotila, J. E.	566
Kotte, W.	811
Kotthoff, P.	460
Kouwenaar, W.	455
Kovačevski, I. C.	413
Kramer, M.	632
Kreibohm de la Vega, G. A.	390
Kreutzer, W. A.	6
Kreutzfeldt-Plathe, R.	457
Krijthe, N.	558
Krishnaswami, C. S.	750
Kruszyński, R.	413
Kuhn, L. R.	676
Kummer, H.	383
Kunkel, L. O.	823
Kuprewicz, V. F.	587
Kurotchkin, T. J.	523
Kuryluk, W.	707
Kutzevol, E. A.	388
Lacaz, C. da S.	28
Lacey, M. S.	596
Lackey, C. F.	150
Lal, A.	664
Lambert, E. B.	404
Lange–de la Camp, M.	660
Langeron, M.	253, 592
Larner, E. E.	426
Larson, R. H.	52, 200
Larter, L. N. H.	92
Lauffer, M. A.	61, 276, 277, 630
Lavin, G. L.	716
Lawrence, W. J. C.	42
Leach, J. G.	412, 612

PAGES

Leach, L. D. 120, 533, 534
Leach, R. 103
Le Beau, F. J. 618
Le Clerg, E. L. 494, 759, 776
Le Coulant, P. 739
Ledingham, G. A. 449
Leefe, J. S. 429
Lefebvre, C. L. 11, 529, 664
Leitzke, B. 667
Leonard, E. R. 747
Leonian, L. H. 757
Lepesme, P. 309
Lepik, E. 411, 655, 758
Lesley, J. W. 64
Leszczenko, P. 166, 199, 707
Leukel, R. W. 172
Levaditi, C. 266
Levadoux, L. 571
Levin, E. A. 394
Levine, M. 580
Levykh, P. M. 634
Lewis, G. M. 310, 393, 394
Lidoyne, A. 35
Liernur, A. G. M. 281
Liese, J. 425
Lihnell, D. 700
Lilly, V. G. 129, 757
Limasset, P. 814
Lin, K. H. 780
Lincoln, R. E. 516
Lindeberg, G. 542
Linder, D. H. 821
Lindfors, T. 317
Lindquist, B. 608
Linford, M. B. 737
Linn, M. B. 780
Lipetzkaya, A. D. 653
Liubarsky, V. L. 145
Llosa, T. 25
Lochhead, A. G. 50
Lodder, J. 525
Loewel, E. L. 37
Loewenthal, C. J. A. 392
Lohwag, H. 221
Lohwag, K. 215
Longmire, W. P. 592
Longrée, K. 681
Lopatin, M. I. 603
Lopatin, V. I. 397
Lorenz, R. C. 147
Loring, H. S. 269, 756
Lovett, H. C. 23
Ludbrook, W. V. 491
Lund, A. 772, 809
Lundell, S. 275
Lunden, A. P. 411
Lungren, E. A. 165
Lunn, W. M. 417
Luthra, J. C. 85, 139, 249
Lutman, B. F. 173
Lyubarski, L. V. 356

Mabalay, E. B. 109
MacClement, W. D. 126, 416
MacDaniels, L. H. 686
Macdonald, J. A. 214, 425, 459
MacKee, G. M. 393, 394
Mackie, J. R. 434
Macrae, R. 144

PAGES

Magee, C. J. 264, 327
Magie, R. O. 351
Magrou, J. 238, 341, 380, 470, 812
Magruder, G. 396
Mähl, A. 528
Maier, W. 462, 753, 810
Mains, E. B. 551, 710, 798
Maire, R. 550
Maklakova, G. F. 584
Malan, C. E. 470
Malik, S. A. 750
Mandelson, L. F. 19
Manil, P. 610, 697
Maplestone, P. A. 594
Marchal, É. 641
Marchionatto, J. B. 37, 85, 295, 478, 521
Markevitch, N. P. 379
Marland, A. T. 389
Martin, A. L. 545
Martin, H. 538
Martin, J. F. 301, 359
Martin, J. P. 456, 477
Martin, L. F. 205, 277
Marudarajan, D. 451
Masalab, N. A. 477
Mashtakoff, S. M. 377
Mason, A. S. 748
Massee, A. M. 464
Massey, L. M. 598
Mathur, P. B. 134
Matsumoto, T. 162, 458, 479
Matsumura, S. 790
Matthews, E. D. 634
Matz, J. 622
Matzulevitch, B. P. 378
Maximov, N. A. 127
Maxson, A. C. 76
Mayerhofer, E. 111
Mayné, R. 641
Mayne, W. W. 735
McAuliffe, H. D. 553
McCallan, S. E. A. 753
McColloch, L. 227
McComb, A. L. 267
McCormick, F. A. 557
McCulloch, L. 31
McDonough, E. S. 174
McFadden, E. S. 662, 730
McFarlane, A. S. 44, 126, 143, 606
McIntosh, A. V. 129
McKay, R. 531, 778
McKinney, H. H. 277, 480
McLachlan, T. 333
McLean, J. G. 366
McLean, R. 417, 418, 419
McLean, R. C. 405
McMartin, A. 620
McMaster, P. E. 593
McNew, G. L. 173, 321
McReynolds, D. K. 479
McWhorter, F. P. 257, 350, 741
McWhorter, O. T. 36, 261
Mead, H. W. 513
Medish, M. N. 699
Mehta, K. C. 511
Melchers, L. E. 94
Melin, E. 542
Memmesheimer, A. M. 178
Mendez, R. 192

	PAGES
Merrill, M.	333
Metzger, C. H.	52
Meyer, K. F.	179
Meyer, W.	563
Mezzetti, A.	362
Middleton, J. T.	113, 316, 497, 716
Mielke, J. L.	3
Milad, Y.	702
Milan, A.	447
Milbrath, D. G.	83
Milbrath, J. A.	350, 420, 529
Millard, W. A.	201
Miller, E. V.	673
Miller, H. J.	186
Miller, J. O.	94
Miller, L. I.	433
Miller, P. R.	25, 519, 532
Miller, P. W.	423, 424
Millikan, C. R.	97, 791
Mills, C. W.	800
Mills, W. R.	271
Milochevitch, S.	455
Minami, S.	522
Minyaeva, O.	115
Mirov, N. T.	73
Misra, S. D.	181
Mix, A. J.	141, 820
Modess, O.	541
Moesz, G.	139
Montemartini, L.	238
Montgomery, R. M.	310
Moore, M.	28, 738
Moore, M. H.	261, 461, 688
Moore, M. T.	456
Moore, W. C.	400
Moore, W. D.	290
Moreau, L.	152
Moreira, S.	101
Morel, G.	688, 806
Morgan, E. T.	547
Morikawa, T.	524
Moriyama, H.	541
Morris, L. L.	722
Moshkoff, B. S.	39
Mossop, M. C.	347
Mosto, D.	252
Mounce, I.	144
Mourashkinsky, K. E.	589, 645
Mu, J. W.	523
Mulder, E. G.	240, 241, 613
Mülhens, K. J.	180
Müller, H.	160
Muller, H. R. A.	794, 813
Müller, K. O.	705, 780
Mundkur, B. B.	57, 585, 627
Murayama, D.	224
Murphy, A. M.	225
Murphy, H. C.	99, 242
Murphy, P. A.	126, 758
Murray, R. K. S.	816
Murrill, W. A.	422, 772
Musbach, F. L.	777
Mushin, R.	279
Nábělek, V.	790
Naghski, J.	553
Nagorny, P. I.	205
Nagy, R.	159
Nakata, K.	467
Nannfeldt, J. A.	275
Nannizzi, A.	604
Narasimhan, M. J.	233
Nason, H. K.	5
Nataljina, O. B.	699
Nattrass, R. M.	90, 550
Naumov, N. A.	478
Neal, D. C.	23, 24
Neergaard, P.	572, 596
Nègre, A.	719
Negroni, P.	527
Neill, J. C.	601
Neilson Jones, W.	283
Nelson, R.	722
Němec, A.	3
Němec, B.	754
Nettles, W. C.	105
Neurath, H.	275
Newell, J.	42
Nichols, R. F. W.	230
Nicolaisen, W.	667
Nicolas, G.	779
Niemeyer, L.	242, 466
Nightingale, A. A.	36
Nijdam, F. E.	742
Nikolaeff, R. P.	698
Niño, F. L.	526, 800
Nisikado, Y.	387
Niwa, S.	430
Noble, N. S.	748
Noble, R. J.	373, 748
Noll, W.	831
Norval, I. P.	206
Nowell, W.	308
Nugent, T. J.	368, 475, 565
Obando, N.	56
Obee, D. J.	182
Ocfemia, G. O.	396, 625, 626, 709
Ogilvie, L.	649, 778, 808, 817
Ohashi, S.	541
Okabe, N.	249
Okada, M.	626
Okada, Y.	413
Oldaker, C. E. W.	51
Olsson, P. A.	720, 776
Oort, A. J. P.	792
Orian, G.	374, 625
Orr, H.	393
Orsini, G.	741
Orth, H.	636
Orton, C. R.	53
Osborn, H. T.	150, 287
Oserkowsky, J.	119
Osterwalder, A.	87
Otero, J. I.	197
Ovinge, A.	79
Ovtcharoff, K.	198
Owen, O. P.	308
Owens, C. E.	758
Oyler, E.	783
Padwick, G. W.	499, 710, 780
Paganini, M. L.	238
Pal, B. P.	585
Palén, A. G. P.	220
Palmiter, D. H.	38, 401
Palo, M. A.	370
Paluch, J.	296, 511

	PAGES
Pampillon, F.	35
Pântea, C.	232
Papaioannou, P.	550
Pape, H.	33, 317
Parfitt, E. H.	595
Parham, B. E. V.	91
Park, M.	273, 422, 655
Parker, B. W.	44
Parker, E. R.	19
Parker, K. G.	771
Parker, R. B.	520
Parker-Rhodes, A. F.	791
Parodi, L. R.	34
Parris, G. K.	222, 366, 693
Pasinetti, L.	741
Passavalli, L. P.	1
Passecker, F.	434
Patel, M. K.	368
Patrick, S.	495
Patrick, S. H. M.	405
Paul, W. R. C.	420, 432
Peace, T. R.	827
Pechuman, L. L.	771
Peech, M.	672
Peltier, G. L.	674
Percher, G.	153
Perlberger, J.	247
Perrone, P.	313
Perry, J. C.	735
Person, L. H.	366
Pervukhina, N. V.	97
Pesante, A.	460, 537
Peschek, K.	76
Petch, C. E.	532
Petch, T.	735
Peterson, W. H.	159
Pethybridge, G. H.	757
Petri, L.	70, 506, 754
Petrova, A. P.	605
Peyronel, B.	479, 703
Pfankuch, E.	266, 714, 715, 810
Philipp, W.	611
Phillips, W. R.	187
Phipps, I. F.	95
Pickel, D. B.	346, 637
Piddlesden, J. H.	272
Piekarski, A.	707
Pierson, R. K.	149, 216
Pilát, A.	347
Pilat, M. V.	380
Pill, R.	704
Pinckard, J. A.	349, 417, 418, 419, 480
Pinkerton, M. E.	394
Piper, C. S.	163
Pirie, N. W.	60, 143, 210, 416, 540
Pirone, P. P.	33, 423
Pirovano, A.	653
Pizer, N. H.	229
Platenius, H.	722
Pohjakallio, O.	668
Pohlig, M.	683
Pole Evans, I. B.	437
Pollacci, G.	124, 781
Polyakoff, I. M.	605
Pomerleau, R.	146
Ponce de Léon, S.	594
Ponomareff, N. V.	1
Popova, N. N.	377, 378
Popova, T. T.	256
Porchet, B.	258
Porte, W. S.	824
Porter, D. R.	85, 151
Porter, R. H.	93
Powers, W. L.	817
Pozhar, Z. A.	646
Prasad, H. H.	188
Prasad, N.	780
Pratt, H. N.	799
Presley, J. T.	674
Preti, G.	599
Prévost, B.	306
Price, W. C.	211, 348
Prince, A. E.	70
Proctor, B. E.	44
Profft, J.	132
Prokoptchouk, A.	109
Pryor, D. E.	753
Pugsley, A. T.	7, 744
Puntoni, V.	26
Quanjer, H. M.	540, 754
Querijero, A. F.	433
Quodbach, K.	456
Raabe, A.	140, 493
Rabanus, A.	426
Rabello	595
Racicot, H. N.	200
Rackemann, F. M.	353
Rădoslavoff, A.	712
Rădulescu, A.	74
Rafique, M.	674
Ralski, E.	168
Ramsey, G. B.	35
Rands, R. D.	203, 343, 618
Rangaswami, S.	818, 819
Rattray, J. M.	589, 804, 805
Raucourt	688, 806
Ray, W. W.	281, 414
Rayner, M. C.	406, 796
Raysky, D. M.	707
Rayss, T.	204, 275
Raznitzyna, E. A.	659
Rea, H. E.	590
Read, W. H.	783
Reckendorfer, P.	194
Redaelli, P.	26, 524, 525
Reddick, D.	475
Reed, G. M.	587
Reed, H. S.	43
Régnier, R.	68
Reichelt, H.	360
Reichert, I.	247, 263, 518
Reid, J. J.	553, 764
Reid, W. D.	64, 331, 389
Reinecke, O. S. H.	187
Reko, V. A.	192
Reneger, C. A.	634
Rennerfelt, E.	189, 774
Rentschler, H. D.	313
Rettger, L. F.	738
Reyer, W.	676
Rhoads, A. S.	518
Rhoads, M. M.	670
Rhoads, V.	670
Riceman, D. S.	163
Rich, H.	739
Richards, B. L.	40

	PAGES
Richardson, N. A.	426
Richter, H.	116, 803
Rietsema, I.	402
Riker, A. J.	159, 510
Riley, D. P.	353
Rivera, V.	267
Rivier, A.	17
Roach, W. A.	539
Robbins, W. J.	268, 542
Robert, A. L.	449
Roberts, J. D.	454
Robertson, C. W.	691
Robertson, D. W.	258
Robertson, W. A.	75
Robertson, W. C.	808
Robinson, C. H.	64
Robinson, J. R.	713
Röder, K.	7, 83, 651
Rodionova, S. M.	115
Rodrigues, A. J.	619
Roemer, T.	195
Rogers, C. H.	175, 590
Rogers, W. S.	464
Rohde, T.	75
Rohmeder, E.	357
Rohmer, G.	12, 367
Roland, G.	78, 287, 429
Roldan, E. F.	433
Rombouts, J. E.	92
Romell, L. G.	541
Roos, K.	122, 692
Rosen, H. R.	242, 306
Rosenfeld, A. H.	625
Rosenstiel, K. von	385
Ross, A. F.	209
Rost, H.	315
Rothberg, M.	72
Roubaud, E.	310, 520
Rouppert, K.	506
Rozendaal, A.	472
Rud, P. I.	615
Rudolph, B. A.	570
Rue, J. L.	323
Runge	15
Runnels, H. A.	403
Ruska, H.	715
Russell, R. C.	414, 792
Russo, G.	673
Ruszkowski, J.	155, 640
Růžička, J.	219
Ryachovsky, N. A.	698
Ryall, A. L.	691
Ryan, H. J.	83
Ryjkoff, V. L.	415, 715
Ryker, T. C.	616
Sabet, Y.	796
Saggese, V.	28
Sahai, L.	454
Salaman, R. N.	125, 129, 131, 697
Salmon, S. C.	169
Salunskaya, N. I.	647
Sampson, K.	628, 821
Sandu-Ville, C.	732
Sanford, G. B.	733
Sarazin, A.	723
Sarejanni, J. A.	10, 26
Sarles, W. B.	777
Sass, J. E.	164
Sattar, A.	85, 139, 750
Saum, G. M.	275
Saunders, F.	335
Savile, D. B. O.	200
Săvulescu, T.	732
Sawada, Y.	162
Schaal, L. A.	339, 815
Schad, C.	806
Schaede, R.	335
Schander, H.	257, 530
Scheifley, C. N.	313
Scherer, H. J.	456
Scherz, W.	435
Scheu, H.	371
Schille, H.	720
Schlehuber, A. M.	170
Schmidt, C. M.	199, 702
Schmidt, M.	399
Schmidt, M. B.	542
Schmitz, H.	4
Schneiderhan, F. J.	261
Schomer, H. A.	673
Schooneveldt, J. C.	579
Schoorel, A. F.	629, 728
Schopfer, W. H.	185
Schroeder, F. R.	674
Schropp, W.	54, 307
Schröter, H.	220
Schultz, E. S.	544
Schultz, H.	7, 83, 651
Schulze, B.	563, 774, 775
Schwartze, C. D.	190, 747
Schweizer, J.	481
Scupin, L.	533
Seastone, C. V.	61
Seaver, F. J.	313
Seelbach, W.	667
Seeler, E. V.	489
Seeliger, R.	781
Seif-El-Nasr, A.El.G.	170
Selariès, P.	12, 306, 367
Semeniuk, G.	255
Semenkova, A. V.	699
Sempio, C.	48, 166, 167, 213, 228, 471
Serr, E. F.	120
Servazzi, O.	639
Seth, L. N.	655
Setterstrom, C.	467
Severin, H. H. P.	78, 369
Shaffer, M. L.	621
Shands, R. G.	388
Shatova, E. V.	377, 378
Shaw, H.	325, 461
Shaw, K. J.	417
Shaw, L.	349
Shear, C. L.	628
Sheffield, F. M. L.	202, 415, 468
Shevtchenko, A. N.	256
Shirko, V. N.	581
Shitakova-Roussakova, A. A.	587
Shutak, V. G.	695
Sibilia, A.	507
Sibilia, C.	506
Siegler, E. A.	158, 422
Siemaszko, W.	259, 488, 521
Silayan, H. S.	444
Silberschmidt, K.	632, 633
Simmonds, J. H.	125, 502
Simmonds, P. M.	165, 515, 660

	PAGES
Simon, M.	78
Sinden, J. W.	9
Singalovsky, Z.	79
Singh, B. N.	134
Singh, S.	139
S'Jacob, J. C.	21, 137
Škorić, V.	559, 560, 562
Skvortzoff, S. S.	96
Slowata, S.	717
Smirnova, V. A.	715
Smith, C. O.	149, 744
Smith, F. L.	289
Smith, H. P.	810
Smith, J. H.	44
Smith, K. M.	126, 416, 540, 812
Smith, M. A.	38, 259
Smith, O. F.	319
Smith, T. E.	417
Snell, K.	303
Snieszko, S. F.	511
Snigur, B. F.	380
Snyder, W. C.	570
Soesman, J. G.	136
Sokoloff, D. V.	644
Solacolu, T.	445
Solkina, A. F.	582
Sorenson, H.	622
Soukhoff, K. S.	297, 415, 666
Soulié, H.	806
Spaulding, P.	558
Spencer, E. L.	716
Spooner, E. T. C.	416
Sprague, R.	33, 297
Sreenivasaya, M.	210
Srinivasan, K. H.	673
Standen, J. H.	734
Stanford, E. H.	515
Staniland, L. N.	653
Stanley, W. M.	61, 209, 212, 630, 756
Stanton, T. R.	99, 172, 242
Stapp, C.	159, 160
Starr, G. H.	14
Steenbjerg, F.	668
Steer, W.	461
Steinberg, R. A.	813
Steiner, H.	661
Steinmetz, F. H.	70
Stellwaag, F.	294
Stern, J.	329
Stevenin, G.	177
Stevens, H.	172
Stevens, H. E.	694
Stevens, N. E.	125, 320, 580, 588
Stevenson, F. J.	339, 544
Stevenson, G. B.	569
Stevenson, G. C.	624
Stevenson, J. A.	203
Stewart, A. M.	547, 733
Stewart, D.	566
Stewart, R. A.	179
Steyaert, R. L.	797
Steyn, D. G.	460
Stirrup, H. H.	226, 646
Storey, H. H.	230, 245, 373, 727
Storey, I. F.	647
Störmer, [I.]	133
Storts, B. P.	594
Straib, W.	98, 164, 167, 300, 512, 679, 734
Straňák, F.	464
Straňák, J.	382
Streets, R. B.	103
Strong, F. C.	281, 354
Strong, M. C.	422
Stubbe, H.	209
Su, M. T.	155
Subba Rao, M. K.	821
Suit, R. F.	351, 404, 695
Summers, E. M.	621
Sutherland, M. L.	614
Süttinger, R.	220
Swanson, A. F.	99
Swingle, R. U.	147
Sydow, H.	56, 57, 204, 819, 820
Syre, H.	544
Szathmáry, S.	311, 312
Szirmai, J.	555
Szymański, W.	199
Tai, F. L.	552
Takimoto, S.	717
Tankó, B.	194
Tarnovitch, N. K.	380
Tasugi, H.	742
Tate, H. D.	760
Tavares, I.	710
Taylor, G. G.	103
Taylor, J. W.	243, 660
Taylor, N. H.	641
Tchakirian, A.	380
Tchanturia, N. N.	671
Tcheremissinoff, N. A.	763
Teakle, L. J. H.	547, 733
Ten Houten, J. G.	357
Tharp, W. H.	106, 452
Thatcher, F. S.	812
Theden, G.	563, 774, 775
Thiel, A. F.	239
Thjotta, T.	591
Thomas, A. V.	425
Thomas, E. A.	119, 490
Thomas, F.	456
Thomas, Harold E.	119
Thomas, H. Earl	684
Thomas, H. R.	364
Thomas, I.	733
Thomas, K. M.	88, 451, 750
Thomas, R. P.	634
Thompson, A.	264, 503
Thompson, A. J.	229
Thompson, G. E.	767, 828
Thompson, M. R.	18
Thomson, R. H. K.	117
Thornberry, H. H.	480
Thorold, C. A.	438
Thung, T. H.	207, 419, 554
Thurston, H. W.	186
Tiffney, W. N.	591, 798
Timonin, M. I.	591
Timoşencu, A.	232
Tims, E. C.	617
Tindale, G. B.	102
Tisdale, H. B.	105, 106
Tisdale, W. B.	482
Tobisch, J.	57
Tochinai, Y.	546
Tompkins, C. M.	113, 223, 286, 364, 427, 459, 497, 740

PAGES

Toole, E. R. . . 284, 359, 719
Treschow, C. 772
Trinchieri, G. 506
Trotter, A. . . . 355, 482
Trout, S. A. 102
True, R. P. 717
Truninger, E. 29
Truog, E. 777
Tucker, C. M. . 113, 316, 488, 766
Tupenevitch, S. M. . . . 581
Turu, H. 310
Tutin, T. G. 334
Tyler, L. J. 771
Tzereteli, L. Y. 671
Tzivenko, J. 699

Ulbrich, E. . . . 59, 710
Ullstrup, A. J. 175
Umbreit, W. W. 342
Uppal, B. N. . . 368, 437, 518
Urbain, A. 591
Utter, L. G. 15

Vaccari, E. 526
Vaheeduddin, S. 18
Valleau, W. D. 763
Vallega, J. 584
Van Beyma Thoe Kingma, F. H. . 315
Vandendries, R. . . . 542
Vanderberg, S. R. . . . 760
Van der Meer Mohr, J. C. . . 765
Van der Plank, J. E. . . 589, 805
Van der Poel, J. 279
Vanderwaeren, J. . . . 78
Van der Werff, A. . . . 334
Van Eek, T. 112
Van Haeringen, G. E. . . 135
Van Haren, H. B. . . . 178
Van Hell, W. F. . . . 458
Van Koot, Y. 484
Van Luijk, A. 46
Van Poeteren, N. . . . 153
Van Schreven, D. A. . . 269, 545
Vanterpool, T. C. . . 165, 472
Van Wyk, J. H. . . . 286
Varadaraja Iyengar, A. V. . 55, 138
Vasiliu, H. 232
Vasudeva, R. S. . . . 249, 674
Vaughan, E. K. 16
Vaupel, O. 563
Venkata Rao, M. G. . . . 343
Venkatarayan, S. V. . . . 105
Venturi, T. 253
Verbunt, J. A. 27
Verma, G. S. 329
Verona, O. 28, 127, 238, 395, 696, 729
Verplancke, G. 820
Verrall, A. F. 213
Verwoerd, L. 286
Vidal, J. L. . . . 435, 499
Vielwerth, V. 437
Viennot-Bourgin, G. . . . 549
Vines, A. E. 218
Vinet, E. 152
Vinogradoff, V. P. . . . 256
Vinson, C. G. 479
Visocchi, V. 280
Visser, W. C. 241
Vivani, W. 362

PAGES

Vladimirskaya, M. E. . . . 96
Voboril, F. 87
Voelkel, H. 436
Volkoff, V. F. 379
Voorhees, R. K. . . . 552
Voss, J. 669
Vovk, A. M. . . . 297, 666
Vzoroff, V. I. 378

Wade, B. L. . . . 6, 81, 430
Wadsworth, F. H. . . . 642
Wagener, W. W. . . . 492
Wakefield, E. M. . . . 755
Waksman, S. A. 54, 336, 342, 476, 570
Walker, J. C. 52, 200, 366, 428, 564, 753, 777
Wallace, G. B. . . 21, 309, 519
Wallace, J. M. . 64, 142, 225, 823
Wallace, T. . . . 743, 746
Walter, J. M. 771
Wang, C. S. 174
Wann, F. B. 40
Ward, F. S. 328
Ward, K. M. 687
Wardlaw, C. W. . 327, 747, 807
Ware, W. M. . 151, 295, 817, 818
Warnes, A. R. 539
Wartenberg, H. 134
Watanabe, T. . . . 434, 496
Waterhouse, W. L. . . . 239
Waterman, A. M. . . . 643
Waterston, J. M. . . 505, 550
Watson, M. A. 126
Wean, R. E. 691
Weber, A. 119
Weber, G. F. 766
Weck, R. 98
Weetman, L. M. . . . 242, 306
Wegelius, T. 564
Wehmeyer, L. E. . . . 414
Weihing, R. M. 258
Weimer, J. L. 320
Weindling, R. 128
Weise, R. 431
Weiss, F. 742
Wellington, R. 326
Wellman, F. L. 824
Wenck, F. 569
Went, J. C. . . . 557, 558
Wenzl, H. . 134, 323, 339, 566, 599
Werner, R. G. 550
Wernham, C. C. 32
Wessels, P. H. 611
West, C. 116
West, E. 820
Whalen, E. J. 179
Wharton, W. P. 282
Whitaker, T. W. . . 85, 151
Whitaker, W. C. 50
White, D. P. 561
White, H. L. . . . 228, 783
White, R. P. . . . 33, 41
Wiant, J. S. 35
Wickens, G. M. 278
Wickerham, L. J. . . . 738
Wilcox, M. S. 402
Wilcoxon, F. 753
Wilde, S. A. 561

	PAGES
Wilkins, W. H.	2, 69, 405, 638
Wilkinson, E. H.	743
Williams, P. H.	184, 570, 783, 808
Willison, R. S.	535, 807
Wilson, E. E.	120, 689
Wilson, G. F.	31
Wilson, H. F.	777
Wilson, J. D.	403
Wilson, R. D.	256
Wiltshire, S. P.	141
Winkelmann, A.	12
Wissler, A.	763
Wolf, C. B.	562
Wolf, F. A.	417, 418, 482, 486, 638
Wolf, F. T.	454, 486
Wolff, J. W.	455
Wollenweber, H. W.	111, 762
Wood, J. I.	405
Woodhead, C. E.	687
Woodworth, C. M.	173
Work, J. L.	312
Wormald, H.	122, 262, 398, 654, 689
Wright, E.	217, 674
Wyckoff, R. W. G.	62, 348, 703, 812
Yablokova, V. A.	663
Yabuta, T.	707
Yakovleff, A. G.	583
Yamamoto, W.	56
Yap, F.	737
Yarwood, C. E.	128, 430, 463, 465, 803
Yatzenko, I. P.	380
Yeager, C. C.	342, 453
Yossifovitch, M.	259
Young, J. E.	45
Young, P. A.	421
Young, V. H.	24, 452
Younkin, S. G.	84
Yu, T. F.	291, 568, 607, 649
Zaitseva, A. Y.	379
Zaumeyer, W. J.	6, 7, 81, 430
Zeller, S. M.	402
Zenin, A. S.	110
Zimmerman, P. W.	467
Zogg, H.	149
Zündel, W.	678
Zweigbaumówna, Z.	155
Zycha, H.	571, 652

Abavit, use of, against citrus albinism, 247; against sett rot of sugar-cane, 620; against *Urocystis occulta* on rye, 166; against wheat bunt, 166.
— B, use of, for the treatment of cotton seed, 373.
Abies, Aleurodiscus amorphus on, in N. America, 827.
—, *Calyptospora goeppertiana* on, 491.
—, *Cephalosporium* on, in N. America, 827.
—, *Ceratostomella piceae* on, in Poland, 488.
—, *Fomes annosus* on, in Switzerland, 357; resistance to, in Denmark, 773.
—, *Pholiota aurivella* on, in Yugoslavia, 562; formerly attributed to *P. adiposa*, 562.
—, *Uredinopsis* spp. on, in U.S.A., life-histories of, 551.
—, *Valsa friesii* on, 74.
— *alba, Pucciniastrum epilobii* on, in Czechoslovakia, 490.
— *balsamea, Fomes pinicola* can infect, 2.
— —, *Ganoderma applanatum* and *Polyporus balsameus* on, in U.S.A., 2.
— *concolor, Spicaria anomala* and *Trichosporium symbioticum* on, in U.S.A., 217.
— *grandis, Botrytis cinerea, Fusarium oxysporium, Pythium* (?) *torulosum*, and *Trichoderma lignorum* on, in Holland, 358.
Abroma, Verticillium dahliae on, in Uganda, 575.
Absidia, longevity of species of, 703.
— *cylindrospora* and *A. glauca* in soil in Scotland, 137.
Acacia, Nematospora on, in Tanganyika, 574.
— *confusa, Maravalia hyalospora* on, in Japan, 489.
— *decurrens, Cercosporella theae* on, in India, 821.
— *karroo, Ganoderma lucidum* on, in S. Africa, 438.
Acaulopage marantica on *Amoeba terricola* in U.S.A., 454.
Acer, Lentinus tigrinus on, in Yugoslavia, 559.
—, *Nectria coccinea* on, in U.S.A., 280, 558.
—, *Polyporus glomeratus* on, in U.S.A., 487.
—, *Taphrina aceris* and *T. lethifera* on, 71.
—, *Verticillium* on, in U.S.A., 281, 354.
—, — *albo-atrum* on, in U.S.A., 67.
— *campestre, Helicobasidium purpureum* on, in Italy, 479.
— —, *Taphrina acericola* on, in Italy, 71.
— *nigrum, Taphrina sacchari* on, in U.S.A., 71.
— *pseudoplatanus, Fomes fomentarius* on, in Denmark, 215.
— —, *Gnomonia veneta* on, in U.S.A., 354.
— *rubrum, Eutypella parasitica* on, in U.S.A., 147.
— —, *Fomes connatus* on, in U.S.A., 280.
[*Acer rubrum*], *Nectria* can infect, 559.
— —, *Schizoxylon microsporum* on, in U.S.A., 147.
— —, *Taphrina dearnessii* on, in Canada and U.S.A., 718.
— *saccharinum, Taphrina carveri* on, in Canada and U.S.A., 718.
— *saccharum, Eutypella parasitica* on, in U.S.A., 147.
— —, *Polyporus litschaueri* on, in U.S.S.R., 356.
— —, *Schizoxylon microsporum* on, in U.S.A., 147.
— —, *Taphrina sacchari* on, in U.S.A., 71.
— *spicatum, Nectria coccinea* on, in U.S.A., 280.
Aceratagallia sanguinolenta, inhibition of viruses by juice of, 540.
— —, transmission of potato yellow dwarf by, 270.
Acetaldehyde, use of, as a soil disinfectant, 182.
Acetic acid, use of, against *Botrytis cinerea* on grapes, 805; against *Ovulinia azaleae* on azalea, 742; against *Pythium* and *Rhizoctonia solani* on ornamentals, 182.
Achlya on fish in U.S.A., 799.
— *flagellata* on fish in U.S.A., 454, 799.
— *prolifera* identical with *A. flagellata*, 454.
Achorion on man, 179; Gram reaction of, 523.
— *gypseum* on man, Gram reaction of, 523.
— *quinckeanum*, culture medium for, 178.
— — on the dog in Czechoslovakia, 455.
— — on man in Algeria, 177.
— *schoenleini* on man, culture medium for, 178; elimination of bacteria in cultures of, 110; occurrence in Algeria, 177; in China, 110, 523; in Italy, 311; in U.S.A., 310, 394; in Yugoslavia, 456.
— *violaceum*, biochemical characters of, 255, 678.
Achras sapota, Phytophthora on, in Burma, 655.
— —, *Septobasidium* on, in Ceylon, 655.
Achromobacter coadunatum, Pseudomonas ovalis (?) identical with, 227.
— *lipolyticum* on *Phaseolus lunatus* in U.S.A., 227.
Aconitum, Bacterium delphinii on, in Canada, 726.
Acremonium potronii on man in Algeria, 178.
Acrospeira asperospora, Stemphylium asperosporum renamed, 141.
— *levis*, note on, 141.
— *macrosporoidea, Stemphylium macrosporoideum* renamed, 141.
Acrostalagmus cinnabarinus, antagonism of, to *Pythium volutum*, 47.
— *koningi* and *A. viridis* synonyms of *Trichoderma viride*, 761.
Acrotheca on man in the Argentine, 800; in Brazil, 28.

Actinomyces in symbiosis with *Myrica gale* in Germany, 335.
— *albus*, antagonism of, to fungi, 129.
— *erythropolis* in relation to *Pythium arrhenomanes* on wheat, 448.
— *madurae* on man in Algeria, 178.
— *scabies*, effect of ultra-short radio waves on, 46.
— — on potato, breeding against, 340; control, 90, 135, 200, 544, 612; factors affecting, 52, 429, 475, 505; genetics of resistance to, 200, 340; occurrence in Bermuda, 505; in Canada, 429; in Cyprus, 90; in Germany, 200, 340, 544; in Norway, 412; in U.S.A., 52, 136, 157, 200, 412, 475, 612; in U.S.S.R., 611; physiologic races of, 412; varietal reaction to, 52, 157, 200, 269, 340, 412, 612.
— — on *Solanum*, species immune from, 475.
Actinomycetes, decomposition of manure by, 342, 476.
—, taxonomy of, 626.
Acyrthosiphon kondoi transmitting red clover mosaic, 600.
Aecidium colchici-aurei on *Colchicum aureum* in India, 59.
— *haussknechtianum* on barberry in Italy, 741.
Aedes aegypti, inhibition of tobacco mosaic virus by juice of, 540.
Aeginetia indica on sugar-cane in the Philippines, 626.
Aerobacter aerogenes, inhibition of tobacco mosaic virus infection by, 348.
Aesculus hippocastanum, see Horse-chestnut.
Agathis australis, *Hendersonula* on, in Queensland, 503.
— *palmerstoni* and *A. robusta*, *Hendersonula* can infect, 503.
Agave americana, *Diatrypella agaves* on, in S. Africa, 819.
Agral as a spreader, 95.
— III as a spreader, 264.
Agropyron, *Tilletia caries* and *T. foetens* can infect, 732.
— *caninum*, *Ustilago hordei* can infect, 665.
— *cristatum*, *Ustilago hordei* on, in U.S.A., 665.
— *repens*, *Puccinia glumarum* on, in Germany, 168, 734.
— —, — *graminis* on, in Germany, 383.
Agrosan, use of, against sett rot of sugar-cane, 620.
— G, use of, against cereal diseases, 94; against cotton diseases, 373; against *Fusarium culmorum* on wheat, 94; against *Puccinia graminis* on wheat, 439; against wheat bunt, 94.
Agrostis, *Mastigosporium album* var. *calvum* on, in U.S.A., 34.
—, *Olpidium brassicae* on, in Wales, 821.
— *alba*, *Sclerospora graminicola* on, in Hungary, 140.
— *palustris*, *Septoria calamagrostidis* on, in U.S.A., 297.
— *stolonifera*, *Corticium solani* on, in U.S.A., 318.
[*Agrostis stolonifera*], 'freckle' of, in U.S.A., 318.
— —, *Pythium* spp. on, antagonism of micro-organisms to, 47.
— —, *Sclerotium rhizodes* on, in Sweden, 34.
— *tenuis*, *Sclerotium rhizodes* on, in Norway and Sweden, 34.
— *vulgaris*, *Sclerotinia borealis* on, in Sweden, 298.
Ajuga reptans, *Sclerotium delphinii* on, in U.S.A., 183.
Albizzia falcata, *Asterina camelliae* on, in Sumatra, 579.
— —, *Ceratophorum albizziae* on, in Java, 281.
— —, *Ganoderma pseudoferreum* on, in Java, 579, 728.
— *moluccana*, *Cercosporella theae* on, in India, 822.
— —, *Ganoderma pseudoferreum* on, in Malaya, 504.
— *sumatrana*, *Ceratophorum albizziae* on, in Java, 281.
Alcohol, use of, against *Aspergillus nigricans* on man, 313; against *Botrytis cinerea* on grapes, 805; against *Hemileia americana* or *H. oncidii* on an orchid, 154; against stickiness and spotting of *Phaseolus lunatus*, 227; as a soil disinfectant, 182.
Alder (*Alnus*), *Fomes fomentarius* on, in Denmark, 215.
—, *Lentinus tigrinus* on, in Yugoslavia, 559.
—, *Nectria coccinea* can infect, 280.
—, *Taphrina* on, list of species of, in N. America, 414.
—, — *robinsoniana* on, in U.S.A., 281.
Aleurites, *Bacterium aleuritidis* on, in U.S.S.R., 378.
—, *Cercosporella theae* on, in India, 822.
— *fordii*, 'puffy bark' and root rot of, in New Zealand, 641.
— *montana*, *Pestalozzia* on, in Burma, 655.
Aleurodiscus amorphus on *Abies* in N. America, 827.
Aleuromarginatus tephrosia, *Aschersonia placenta* on, in Sierra Leone, 157.
Aleyrodidae, *Aschersonia badia* on, in Sierra Leone, 157.
— transmitting gloss disease of tobacco, 197; tobacco pseudo peh-sim, 765.
Allantospora violacea on man in Italy, 254.
Allescheria boydii on man in Algeria, 178.
Allium ampeloprasum, *Puccinia allii* on, in Palestine, 204.
— *cepa*, see Onion.
— *porrum*, see Leek.
— *sativum*, see Garlic.
— *schoenoprasum*, *Fusarium avenaceum* and *F. vasinfectum* var. *zonatum* f. 1 on, in Switzerland, 227.
Almond (*Prunus amygdalus*), *Clasterosporium carpophilum* on, in Hungary, 535.
—, *Coniothyrium prunicolum* on, in Hungary, 535; *Phyllosticta prunicola* renamed, 534.
— mosaic in Bulgaria, 189; transmission of, to peach, 260.

[Almond], narrow-striped variegation on, in Bulgaria, 189.
—, peach mosaic affecting, 260.
—, *Sclerotinia laxa* on, in U.S.A., 533.
—, *Verticillium albo-atrum* on, in U.S.A., 67.
Alnus, see Alder.
Alocasia, *Phytophthora colocasiae* on, in Ceylon, 655.
Alopecurus agrestis, *Cephalosporium gramineum* on, in Japan, distinct from *C. acremonium*, 387.
— *pratensis*, *Mastigosporium album* on, in Europe, 34.
Alsike, see Clover.
Alternaria in relation to asthma and hay fever of man, 108, 254, 679, 799.
— in the air in U.S.A., 108.
— on apple in England, 743.
— on chilli in India, 500.
— on clover in U.S.S.R., 115.
— on cotton, blue stain caused by, 308; control, 573; factors affecting, 573; occurrence in the Belgian Congo, 248; in S. Africa, 573; in U.S.A., 308, 520; study on, 308; varietal reaction to, 573.
— on cotton fabrics in New S. Wales, 726.
— on *Godetia hybrida* in Denmark, 596.
— on *Gypsophila elegans* in Denmark, 572.
— on paper in Italy, 697.
— on peach in Canada, 535.
— on peas in U.S.A., 495.
— on *Scorzonera tau-saghyz* in U.S.S.R., 137.
— on strawberry in England, 809.
— on vine in Italy, 498.
— *brassicae* on cabbage in Brazil, 222.
— — on colza in Germany, 493.
— — on horse-radish in Germany, 365.
— — on *Iberis umbellata* in Denmark, 572.
— — on rape in Germany, 493.
— —, toxicity of extracts and filtrates of, to cabbage and tomato, 49.
— *cheiranthi* on *Matthiola incana* and wallflower in Denmark, 596.
— *citri* on citrus in U.S.S.R., 671.
— *humicola* on cellulose pulp in Finland, 774.
— *longipes* on tobacco in India, 373; in Java, 555; in Southern Rhodesia, 483.
— *mali* on apple in the Argentine, 38; in Southern Rhodesia, 785; transmission of, by *Bryobia praetiosa*, 38.
— *malvae* accepted as a valid species, 573.
— *passiflorae* on passion fruit in New S. Wales, 234; in New Zealand, 235.
— *radicina* on carrot in Bulgaria, 712; in Denmark, 573.
— — on celery, flax, and *Malva* in Denmark, 573.
— — renamed *Stemphylium radicinum*, 573.
— *solani*, effect of ultra-short radio waves on, 46; of ultra-violet rays on, 45, 46.
— — on *Gerbera jamesoni* in Italy, 114.
— — on potato, control, 237; effect of, on yield, 340; factors affecting, 340; occurrence in Ceylon, 655; in Colombia, 12; in Germany, 340, 474; in U.S.A., 237; study on, 474.
[*Alternaria solani*] on tomato, control, 66, 332, 421, 443, 728; factors affecting, 66; occurrence in French Morocco, 66; in Southern Rhodesia, 785; in U.S.A., 332, 376, 421, 443, 728; study on, 66; varietal reaction to, 376.
— *tenuis* on flax in Germany, 315.
— — on larch, pine, and *Pseudotsuga taxifolia* in Holland, 358.
— — on wood pulp in Italy, 362.
— *tomato* on tomato, nomenclature of, 766; occurrence in Cuba, U.S.A., and W. Indies, 766.
Althaea, see Hollyhock.
Alum, use of, with Bordeaux mixture, 3.
Aluminium compounds, use of, against *Plasmopara viticola*, 508.
— sulphate, effect of, on *Phymatotrichum omnivorum*, 176.
— —, use of, against damping-off of *Dianthus*, 182.
Alyssum saxatile, *Peronospora galligena* on, in Germany, 683.
Amanita mappa, *A. muscaria umbrina*, and *A. pantherina* on pine and spruce forming mycorrhiza in Sweden, 541–2.
— *rubescens* on pine forming mycorrhiza in Sweden, 542.
Amaranthus retroflexus, potato virus X can infect, 337.
Amastigosporium graminicola synonym of *Mastigosporium calvum*, 34.
Amauroderma, exclusion of, from the genus *Ganoderma*, 712.
Amelanchier, *Pezicula pruinosa* on, *Sphaeronema pruinosum* conidial stage of, 761.
American type culture collection, catalogue of, 195.
Ammoniacal copper carbonate spray, use of, against *Dothiorella* on banana and orange, 263.
Ammonium acetate, use of, against damping-off of ornamentals and vegetables, 181.
— chloride in relation to leaf scorch of currants, 39.
— hydroxide, use of, against damping-off of ornamentals and vegetables, 181; against *Phytophthora* on asparagus, 151.
— polysulphide, use of, with oil sprays against orange water spot, 19.
— sulphate, use of, against chlorosis of sugar-cane, 237; against reclamation disease, 240.
— —, see also Fertilizers.
— thiocyanate, use of, for *Ribes* eradication, 359.
Amoeba terricola, *Acaulopage marantica* on, in U.S.A., 454.
— *verrucosa*, *Cochlonema megalosomum* on, in U.S.A., 454.
Amomum subulatum, see Cardamom, Greater.
Ampelopsis, *Bacillus vitivorus* on, legislation against, in Nyasaland, 768.
—, *Oidiopsis taurica* on, in French Morocco, 83.
Amphorophora onobrychis, *Entomophthora aphidis* on, in Hungary, 140.

[*Amphorophora*] *rubi* transmitting raspberry mosaic in U.S.A., 190.
Amsco special solvent, use of, as a penetrant, 285.
Amygdalus communis, see Almond.
— *persica*, see Peach.
Ananas comosus, see Pineapple.
Anchusa capensis, *Sclerotium delphinii* can infect, 183.
Andropogon furcatus, *Puccinia andropogonis*, *Sorosporium everhartii*, and *S. provinciale* on, in U.S.A., 11.
— *scoparius*, *Puccinia andropogonis* and *Sphacelotheca andropogonis* on, in U.S.A., 11.
— *sorghum*, see Sorghum.
— — var. *sudanensis*, see Sudan grass.
— *tectorum*, *Mycosphaerella spilota* on, in Sierra Leone, 820.
Anethum graveolens, see Dill.
Aneurin, effect of, on fungi, 336; on mycorrhizal fungi, 470, 542; on *Ustilago violacea*, 185, 232.
Anguillulina dipsaci, *Arthrobotrys oligospora* parasitizing, in England, 251.
Aniline dyes, see Dyes, aniline.
Ankylostoma duodenale, *Arthrobotrys oligospora* and *Dactylella* can attack, 310.
Antagonistic fungi as a means of controlling root parasites, 47.
Antennularia in Australia, 627.
Anthriscus cerefolium, celery mosaic can infect, 369.
Antirrhinum majus, *Botrytis* on, in U.S.A., 741; trichome disposition in relation to, 741.
— —, *Phyllosticta antirrhini* on, in Denmark, 572; in Poland, 458.
— —, *Puccinia antirrhini* on, control, 457; effect of, on host, 128; occurrence in Bulgaria, 413, 712; in Palestine, 11, 204; in Poland, 457; in Rumania, 740; in U.S.A., 128; studies on, 457, 740; varietal reaction to, 457.
— —, *Verticillium* can infect, 783.
Ants, *Beauveria bassiana* on, 735.
—, *Isaria strigosa* on, in Germany, 736.
Aphanomyces on beet in U.S.A., 566.
— *cochlioides* on beet in U.S.A., 158.
— *euteiches* on (?) peas in U.S.A., 777.
— *raphani* on radish in Canada, 725.
Aphids, *Empusa fresenii* on, in Sierra Leone, 157.
— transmitting *Musa textilis* mosaic, 396.
Aphis transmitting passion fruit woodiness, 749.
— *apigraveolens* and *A. ferruginea-striata* transmitting celery mosaic, 370.
— *gossypii* transmitting celery mosaic, 292, 370.
— — transmitting cucumber mosaic, 292; *Musa textilis* mosaic, 396.
— *laburni* transmitting red clover mosaic, 600; groundnut rosette, 652.
— *maidis* transmitting sugar-cane mosaic, 761.
— *rhamni* transmitting cucumber virus 1, 509, 803; potato virus A, 133.
— *rumicis*, inhibition of tobacco mosaic virus by juice of, 540.
[*Aphis rumicis*] transmitting broad bean mosaic, 649; celery mosaic, 370; cucumber virus 1, 803.
— *sacchari* in relation to chlorotic streak of sugar-cane, 274.
Apium graveolens, see Celery.
Aplanobacter insidiosum on lucerne in U.S.A., 258; in U.S.S.R., 379.
— (?) *michiganense* on potato in Canada, 201.
— — on tomato, control, 234, 421; note on, 765; occurrence in New S. Wales, 234; in New Zealand, 64, 235; in U.S.A., 421, 765; (?) in U.S.S.R., 422; in Victoria, 279; study on, 279.
stewarti, identification of, by bacteriophage, 786.
— on maize, forecasting incidence of, 588; occurrence in U.S.A., 588; studies on, 173, 244, 516.
— — on sorghum in Italy, 517.
— — on *Tripsacum dactyloides* in U.S.A., 449.
Apple (*Pyrus malus*), *Alternaria* on, in England, 743.
—, — *mali* on, in the Argentine, 38; in Southern Rhodesia, 785; transmission of, by *Bryobia praetiosa*, 38.
—, *Bacterium tumefaciens* on, in Germany, 160, 381.
— bitter pit in Denmark, 118, 119; in New Zealand, 118.
—, *Botryosphaeria ribis* var. *chromogena* on, in Southern Rhodesia, 784.
—, *Botrytis cinerea* on, in Denmark, 118, 119; in England, 743.
— breakdown in New Zealand, 235.
— cankers in England, 654.
— chlorosis, lime-induced, in U.S.A., 702.
— —, mosaic in relation to, in Bulgaria, 746.
—, *Cladosporium herbarum* on, in Switzerland, 119.
—, *Coniothecium chomatosporum* on, in England, 461; in Southern Rhodesia, 784.
—, *Coniothyrium tirolense* on, 507.
— core-flush in Canada, 187.
—, *Corticium galactinum* on, in U.S.A., 321.
— cracking in Southern Rhodesia, 784.
—, *Diaporthe* on, in England, 744.
—, *Diplodia pseudodiplodia* on, see *Physalospora obtusa* on.
— diseases, Dutch guide to non-parasitic, 398.
—, effect of copper compounds on fruit set of, 686; of sprays on photosynthesis in, 443, 603, 686; of sulphur on photosynthesis in, 685.
—, *Erwinia amylovora* on, factors affecting susceptibility to, 685; nature of resistance to, 36; occurrence in Canada, 725; in U.S.A., 399; study on virulence of, 399.
—, *Fabraea maculata* on, in the Argentine, 532; in U.S.A., 259.
—, *Fusarium* on, in England, 744; in Italy, 572.
—, *Gloeodes pomigena* on, in Poland, 259.

[Apple], *Gloeosporium album* on, control, 533; factors affecting, 118, 743; occurrence in Denmark, 118, 119; in England, 743; in Germany, 533; varietal reaction to, 744.
—, *Glomerella cingulata* on, control, 235; occurrence in England, 744; in New Zealand, 235; in Southern Rhodesia, 784.
—, *Gymnosporangium* on, in U.S.A., 354.
—, — *clavipes* on, in U.S.A., 533.
—, — *globosum* on, in U.S.A., 533.
—, — *juniperi-virginianae* on, in U.S.A., 321, 533.
— internal breakdown, control, 187, 725; factors affecting, 118, 235; occurrence in Canada, 187, 725; in Denmark, 118; in New Zealand, 235.
— — cork in New S. Wales, 155; in New Zealand, 117.
— Jonathan spot in Australia, 657; in Denmark, 118, 119.
— kernel rot in Denmark, 119.
— leaf scorch, potassium deficiency in relation to, in U.S.A., 188.
—, *Lentinus tigrinus* on, in Yugoslavia, 559.
—, *Leptothyrium pomi* on, in Poland, 259.
— little leaf in Queensland, 502, 687.
—, magnesium deficiency in, in England, 743.
—, *Marasmius pyrinus* on, in U.S.A., 461.
— measles, minor elements in relation to, in U.S.A., 785.
— mosaic in U.S.A., 259; in U.S.S.R., 699.
— mouldy core in New Zealand, 687.
—, *Nectria galligena* on, in England, 743.
—, *Neofabraea malicorticis* on, in U.S.A., 532; synonym of *Pezicula malicorticis*, 762.
—, *Penicillium* on, in Denmark, 118.
—, — *expansum* on, control, 441; occurrence in Bulgaria, 712; in Denmark, 119; in England, 743; in Southern Rhodesia, 784.
—, *Pezicula* on, pathogenicity of species of, 762.
—, — *malicorticis* on, synonym of *Neofabraea malicorticis* (q.v.), 762.
—, — *plantarium* can infect, 507, 762.
—, *Phyllosticta angulata* on, in England, 400.
—, — *mali* on, in Czechoslovakia, 464.
—, *Physalospora obtusa* on, in England, 744; in Germany, 507.
—, physiological disease of, in England, formerly attributed to *Coniothecium chomatosporum*, 461.
—, *Phytophthora cactorum* on, control, 320, 807; occurrence in U.S.A., 807.
— pitting in S. Africa, 438.
—, *Pleospora pomorum* [*P. herbarum*] on, in England, 744.
—, *Podosphaera leucotricha* on, in Germany, 507; in Southern Rhodesia, 784.
—, *Pythium aphanidermatum* can infect, 781.
—, — *ultimum* can infect, 497.
—, *Rhizopus arrhizus* on, in India, 500.
—, — *nigricans* on, in England, 743.
—, *Rosellinia necatrix* on, in Cyprus, 90.
[Apple] scald, control, 235, 438, 443; factors affecting, 118, 235, 657, 727, 806; occurrence in Australia, 657; in Denmark, 118, 119; in England, 117; in New Zealand, 235; in S. Africa, 438, 806; in U.S.A., 443, 727; varietal reaction to, 443.
—, *Sclerotinia* on, in Denmark, 118; in Germany, 401.
—, — *fructigena* on, in Denmark, 119; in England, 743.
—, — *laxa* on, in Bulgaria, 190.
—, *Sclerotium rolfsii* on, in U.S.A., 80.
— spotting in storage in England, 116.
—, *Stereum purpureum* on, in Victoria 744.
— storage pit in New Zealand, 235.
—, *Torulopsis pulcherrima* on, in Switzerland, 259.
—, *Trichothecium roseum* on, in Denmark, 119; in England, 744.
—, *Venturia inaequalis* on, ascospore discharge in, 37, 462, 530, 531; breeding against, 399, 507; control, 186, 236, 461, 462, 531, 532, 577, 602, 786, 806; factors affecting, 507; occurrence in Canada, 532; in Cyprus, 90; in Denmark, 119; in Eire, 531; in England, 461, 688; in France, 806; in Germany, 37, 399, 462, 507, 530, 531, 602; in U.S.A., 186, 236, 577; specific reaction to, 399, 507; toxicity of phenothiazine to, 806.
— water-core in U.S.A., 687.
Apricot (*Prunus armeniaca*), *Clasterosporium carpophilum* on, in Hungary, 535.
—, *Coniothyrium prunicolum* on, in Hungary, 535; *Phyllosticta prunicola* renamed, 534; in S. Australia, 121.
— gummosis in S. Australia, 121.
— leaf curl in Austria and (?) Bulgaria, 323.
— little leaf in U.S.A., 36, 43.
— mosaic in Bulgaria, 189, 323; in Czechoslovakia and France, 323; in U.S.S.R., 699; transmission of, to peach, 260.
—, peach mosaic affecting, 260.
—, *Phyllosticta beijerinckii* on, in Hungary, 535.
—, plum pox affecting, in Bulgaria, 188.
—, *Pseudomonas cerasi* on, in U.S.A., 689.
—, *Puccinia pruni-spinosae* on, in U.S.A., 745.
—, *Sclerotinia fructicola* on, in U.S.A., 533, 690.
—, — *laxa* on, control, 120; occurrence in U.S.A., 120, 533, 690; varietal reaction to, 690.
—, *Stereum purpureum* on, in Victoria, 744.
Aquilegia, Haplobasidium pavoninum on, in England, 401, 724.
— *canadensis, Sclerotium delphinii* can infect, 183.
— *vulgaris*, cucumber virus 1 affecting, in Germany, 509, 803.
Arachis hypogaea, see Groundnut.
Aralis cordata, Phoma araliae var. *microspora* on, in Japan, 434.
Araucaria cunninghamii, Helicobasidium compactum on, in Queensland, 503.
— —, mycorrhiza of, in Nyasaland, 406.

Archimycetes, list of, in Hungary, 139.
Areca palm (*Areca catechu*), *Corticium koleroga* on, in India, 451.
— —, *Gloeosporium* on, in India, 89.
— —, *Phytopthora arecae* on, control, 89, 233; occurrence in India, 89, 233, 518; study on, 518.
Areskap as a spreader, 440, 598.
Aresket 240 as a spreader, 440.
Aresklene as a spreader, 440, 785.
Aretan, use of, against *Actinomyces scabies* on potato, 90, 544; against *Corticium solani* on potato, 544, 545; against *Spongospora subterranea* on potato, 90.
Argemone mexicana, *Peronospora gäumannii* on, in India renamed *P. indica*, 57.
— —, *Polythrincium guanicense* on, in the Dominican Republic, 58; *Cladosporium guanicensis* renamed, 58.
Armillaria on citrus in Dutch E. Indies, 794.
— *fuscipes*, see *A. mellea*.
— *mellea*, cultural study on, 789.
(?) — — on cacao in Brazil, 93.
— — on carrot in England, 724.
— — on cinchona in Sumatra, 578.
— — on citron in Crete, 672.
— — on coffee in Java, 452.
— — on conifers in Great Britain, 361.
— — on forest trees in U.S.A., 280.
— — on lavender in England, 724.
— — on strawberry in U.S.A., 402.
— — on tea in Sumatra, 579.
— — on timber, 360; in Finland, 564.
Arrhenatherum avenaceum, *Sclerotinia graminearum* on, in U.S.S.R., 582.
— —, *Tuburcinia avenae-elatioris* on, in Poland, 552.
— —, *Ustilago perennans* on, in the Argentine, 34.
Arsenic, a constituent of osmolite timber preservatives, 775.
Arthrobotrys musiformis, control of *Heterodera marioni* on pineapple by, 737.
— *oligospora* can attack *Ankylostoma duodenale* and *Strongyloides fülleborni*, 310.
— —, control of *Heterodera marioni* on pineapple by, 737.
— — in soil in France, 251.
— — on *Anguillulina dipsaci* in England, 251.
— — on nematodes, 675.
— — on *Strongylus* and *Trichonema*, 520.
Arthrographis langeroni on man in France, 593.
Artichoke (*Cynara scolymus*), *Oidiopsis taurica* on, in French Morocco, 83.
Artocarpus blumei, *Fomes noxius* on, in Dutch E. Indies, 137.
Arum maculatum, mycorrhiza of, in France, 470.
Aschersonia badia on Aleyrodidae in Sierra Leone, 157.
— *placenta* on *Aleuromarginatus tephrosia* in Sierra Leone, 157.
Asclepias, *Oidiopsis taurica* on, in French Morocco, 83.
Ascochyta abelmoschi on *Hibiscus esculentus* in Bulgaria, 413.
— *affinis* synonym of *Stagonospora meliloti*, 320.
— *boehmeriae* Woronichin on *Boehmeria nivea* in Italy, 114; *A. boehmeriae* Watanabe (?) synonym of, 114.
— *caulicola* on *Melilotus* in Germany and U.S.A., 35.
— *cheiranthi* on wallflower in Denmark, 572, 596.
— *citri* on grapefruit, lemon, and orange in Brazil, 672.
— *imperfecta* on lucerne in U.S.A., 11.
— *linicola* on flax in U.S.S.R., 256.
— *lycopersici*, see *Didymella lycopersici*.
— *medicaginis* synonym of *Stagonospora meliloti*, 320.
— *piniperda* on spruce in Bohemia, 219.
— *pinodella* on lupin, 832.
— — on pea in Germany, 831; in U.S.A., 237.
— — on soy-bean in Germany, 832.
— *pisi* on pea, 832; in U.S.A., 777.
— — on lucerne in U.S.S.R., 397.
— *pteridis* on *Pteridium aquilinum* in Austria, 57.
— *rabiei* on *Cicer arietinum* in India, 86.
— *rusticana* on horse-radish in Germany, 365.
— *sorghina* on sorghum in Italy, 517.
— *viciae*, note on, 140.
Ascomycetes, list of, in Belgium, 820.
Ascorbic acid, effect of, on *Ustilago zeae*, 18.
Ash (*Fraxinus*), *Mycosphaerella fraxinicola* on, in U.S.A., 638; *Phyllosticta viridis* imperfect stage of, 638.
—, *Nectria galligena* or its var. *major* on, in England, 825.
—, *Pholiota aurivella* on, in Yugoslavia, 562.
—, *Pseudomonas fraxini* on, *Bacterium savastanoi* var. *fraxini* renamed, 560; occurrence in England, 825; in Yugoslavia, 560.
—, — *savastanoi* on, 825; in Czechoslovakia, 490.
—, *Ustulina vulgaris* can infect, 70.
Ashbya, see *Nematospora*.
Asparagus, *Fusarium culmorum* on, in Germany, 431.
—, *Helicobasidium purpureum* on, in England, 779.
—, *Phytophthora* on, in U.S.A., 151.
—, *Puccinia asparagi* on, control, 292, 649, 779; occurrence in England, 778; in Germany, 292, 649.
— *sprengeri*, *Bacterium fascians* on, 597; in Germany, 33.
— —, — *tumefaciens* on, in Germany, 159.
Asparagus kale (? *Brassica oleracea* var. *botrytis*), cucumber virus 1 affecting, in England, 784.
Aspen (*Populus tremula* and *P. tremuloides*), *Hypoxylon pruinatum* on, in U.S.A., 1.
—, *Nectria coccinea* on, in U.S.A., 558.
—, *Septoria musiva* on, in Canada, 771.

Aspergillus in relation to asthma and hay-fever in man, 254, 779.
— on birds, 591.
— on buildings in Great Britain, 334.
— on butter in U.S.A., 595.
— on cereals, 93.
— on cotton fabrics in New S. Wales, 726.
— on food in New Zealand and Victoria, 460.
— on maize in U.S.A., 18, 670.
— on man in America, 179; in the British Navy, 677; in China, 179.
— on oil palm in Malaya, 503.
— on *Scorzonera tau-saghyz* in U.S.S.R., 137.
— *calyptratus* in the upper air, 44.
— *chevalieri* on meat in U.S.A., 255.
— *flavus*, antagonism of fungi to, 173.
— —, copper requirements of, 240.
— —, endotoxin of, 109.
— — in the upper air, 44.
— — on locusts in France, 310.
— — on maize in U.S.A., 173.
— — on tobacco in Southern Rhodesia, 632.
— *fumigatus*, endotoxin of, 109, 679.
— — on the fowl in U.S.A., 679.
— — on grouse in Norway, 591.
— — on man, 523.
— (?) — on strawberry in England, 191.
— *glaucus*, humidity in relation to, 610.
— — in the upper air, 44.
— — on citrus in U.S.S.R., 671.
— — on meat in U.S.A., 255.
— *japonicus* on pear in India, 188.
— *niger*, antagonism of, to *A. flavus*, 173.
— —, copper requirements of, 240.
— —, effect of growth substances on, 336.
— —, humidity in relation to, 610.
— —, inhibition of infectivity of tobacco mosaic virus by, 348.
— — in soil, effect of incorporation of, 817.
— — in the upper air, 44.
— — on avocado in Trinidad, 193.
— — on citrus in U.S.S.R., 671.
— — on man in U.S.A., 313.
— — on mango in Trinidad, 193.
— — on onion in New S. Wales, 501.
— —, use of, in soil-copper determinations, 241.
— *nigricans* on man in U.S.A., 313.
— *oryzae*, endotoxin of, 109.
— *repens* on meat in U.S.A., 255.
— *ruber* on meat in U.S.A., 255.
— *tamarii* on maize in U.S.A., 173.
Asperisporium caricae on papaw in the Argentine, 478.
Asphalt, use of, against *Corticium salmonicolor* on rubber, 342; as a wound dressing, 786.
Aspidiotus perniciosus, *Septobasidium* on, in the Argentine, 521.
Aster, China (*Callistephus chinensis*), boron deficiency in, in U.S.A., 817.
—, —, cucumber virus 1 on, in Germany, 803.
—, —, *Fusarium conglutinans* var. *callistephi* on, in Italy, 113; in New S. Wales, 234.
[Aster, China], potato yellow dwarf can infect, 270.
—, —, tomato spotted wilt affecting, in France, 65.
—, —, *Verticillium* can infect, 783.
Asterina camelliae, *Dimerium wattii* parasitizing, in India, 822.
— — on *Albizzia falcata* in Sumatra, 579.
— — on tea in India, 822; in Sumatra, 579.
— *manihotis* on *Manihot glaziovii* in Sierra Leone, 820.
Asterineae in Uganda, 56.
Asterinella hiugensis on bamboo in Japan, 205.
Asterocystis radicis on flax in Holland, 268.
— — on tobacco in Italy, 483.
— — synonym of *Olpidium brassicae*, 821.
Asteroma mali on *Pyrus* in Austria, 57.
Asterotheca nigrocornis on bamboo in Japan, 205.
Atelosaccharomyces hominis on man in Europe, 29.
Aucuba japonica, *Macrosporium* on, in Italy, 741; *Pleospora* stage of, 741.
Auxins, effect of, on *Ustilago violacea*, 185.
Avena spp., see Oats.
Avocado pear (*Persea americana*), *Aspergillus niger* and *Botryosphaeria ribis* on, in Trinidad, 193.
— —, *Botryosphaeria ribis* var. *chromogena* on, in Southern Rhodesia, 784.
— —, *Colletotrichum gloeosporioides*, *Curvularia lunata*, and *Diaporthe* (?) *citri* on, in Trinidad, 193.
— —, *Fomes noxius* on, in Malaya, 504.
— —, *Guignardia* and *Pestalozzia leprogena* on, in Trinidad, 193.
— —, sun blotch of, in U.S.A., 694.
— —, (?) *Ustulina zonata* on, in Malaya, 504.
Azalea, see *Rhododendron*.

Bacillus gossypinus on cotton in Colombia, 12.
— *melolonthae* on cockchafer, 107.
— *mycoides*, effect of, on tobacco mosaic virus, 349.
— *putrificus* in relation to soil copper deficiency, 240.
— *simplex*, antagonism of, to *Corticium solani* on bean, 567.
— —, use of, against damping-off of cucumber and pea, 567.
— *sorghi* on sorghum in Italy, 518.
— *subtilis*, antagonism of, to fungi, 129.
— *vitivorus* on vine in France, 498.
— — on Vitaceae, legislation against, in Nyasaland, 768.
Bacteria, classification of plant-pathogenic, 659.
—, decomposition of manure by, 476.
— in relation to staining of the medium by *Beauveria globulifera*, 521.
—, method for freeing fungus cultures from, 45.
—, mycolytic, use of, against *Gibberella saubinetii*, 659.
— on clover seed in U.S.S.R., 115.

[Bacteria] on pineapple, in relation to marbling, 503.
—, review of literature on growth factors for, 335.
—, use of, in the biological control of insect pests, 232.
Bacterial disease of *Matthiola incana* var. *annua* in New S. Wales, 256; in U.S.A., 257.
— — of vine in France, 87.
Bacteriophage in relation to lucerne failure, 786, 787.
—, nature of, 267.
— of *Bacterium malvacearum*, 249; of *Bact. tumefaciens*, 158; of *Bact. xanthochlorum*, 445; of *Erwinia aroideae*, 162; of *Pseudomonas citriputeale*, 445.
—, use of, to identify bacteria, 786.
Bacterium, genus defined, 659.
— on coffee in Belgian Congo, 21.
— *albilineans* on sugar-cane, factors affecting, 274; occurrence in Mauritius, 374; in the Philippines, 625; in Queensland, 274; varietal reaction to, 374.
— *alboprecipitans* on sorghum in Italy, 517.
— *aleuritidis* on tung in U.S.S.R., 378.
— *andropogoni* on sorghum in Italy, 517.
— *angulatum* on tobacco, control, 576, 764; factors affecting, 553; occurrence in Southern Rhodesia, 483; in U.S.A., 553, 576, 764; serological studies on, 553, 576.
— *atrofaciens* on potato and tomato in U.S.S.R., 378.
— *cerasi* on fruit trees in U.S.S.R., 378.
— *cerealium* on barley in U.S.S.R., 379.
— *coli communis*, effect of, on tobacco mosaic virus, 349.
— — in relation to soil copper deficiency, 240.
— *coronafaciens* on oats in New Zealand, 235, 389.
— — *atropurpureum* on *Bromus inermis* in U.S.A., 11.
— *croci* on onion in U.S.S.R., 378.
— *delphinii* on *Aconitum* in Canada, 726.
— *fascians* on *Chrysanthemum indicum* in Germany, 33, 317.
— — on various hosts in England, 597; in Germany, 33; in Sweden, 317; study on, 597.
— *flaccumfaciens* on bean, in U.S.A. and other countries, 497.
— *flavozonatum* synonym of *Pseudomonas begoniae*, 740.
— *glycineum* on soy-bean in Bulgaria, 413.
— *hibisci* on *Hibiscus* in U.S.S.R., 379.
— *holci* and *Bact. holcicola* on sorghum in Italy, 517.
— *jaggeri* on celery in U.S.S.R., 379.
— (?) *juglandis* on *Corylus avellana* in U.S.A., 424.
— — on walnut in New S. Wales, 91; in U.S.A., 423.
(?) — *maculicola* on cauliflower in Fiji, 92.
— *malvacearum* on cotton, see under Cotton.
— *marginale* on lettuce in Bermuda, 506.
[*Bacterium*] *marginatum* on gladiolus in New S. Wales, 113.
— *matthiolae* synonym of *Pseudomonas syringae*, 257.
— *medicaginis* var. *phaseolicola* on bean, comparative study of *Bact. puerariae* and, 495; control, 366; occurrence in U.S.A., 366; in U.S.S.R., 495; serological studies on, 127, 495.
— *mori* on mulberry in U.S.A., 158; serological studies on, 445, 495.
— *oryzae* on rice in U.S.S.R., 379.
— *panici* on *Panicum miliaceum* in Bulgaria, 413.
— *papavericola* on *Meconopsis baileyi* in Canada, 726.
— *phaseoli* on bean in U.S.A., 366, 725; in U.S.S.R., 127.
— — on *Dolichos lablab* in the Sudan, 392.
— — on *Phaseolus acutifolius* and *P. aureus* in U.S.S.R., 127.
— — on *Phaseolus lunatus* in Bermuda, 505.
— — var. *fuscans* on bean in U.S.S.R., 495.
— — var. *sojense* on soy-bean in India, 368; in U.S.S.R., 379.
— *prodigiosum*, antagonism of, to fungi, 129.
— *pruni* on peach in U.S.A., 376, 788.
— *puerariae* on bean, comparative study of *Bact. medicaginis* var. *phaseolicola* and, 495; occurrence in U.S.S.R., 495.
— *rhizogenes*, *Pelargonium* immune from, 296.
— *ricini* on *Ricinus communis* in Uganda, 575.
— *ricinicola* on *Ricinus communis* in U.S.S.R., 379.
— *rubrilineans* on sorghum in Italy, 517.
— — on sugar-cane in Brazil, 619, 624; in Queensland, 274; in Uganda, 576; study on, 619; varietal reaction to, 274, 576, 619.
— *savastanoi* var. *fraxini* renamed *Pseudomonas fraxini*, 560.
— *sepedonicum* on potato, control, 201, 613; note on, 725, 788; occurrence in Canada, (?) 201, 725; in Norway, 412; in U.S.A., 53, 412, 612, 613, 758, 788; study on, 53; transmission of, by tubers, 412, 613.
— *solanacearum*, epinastic response induced in plants by, 789.
— — on banana in Haiti, 328.
— — on eggplant in the Philippines, 370, 444.
(?) — — on *Musa ensete* in Italian E. Africa, 693.
— — on plantain in Haiti, 328.
(?) — — on *Portulaca oleracea* in Hawaii, 478
— — on potato, control, 473, 788; factors affecting, 473; occurrence in Hawaii, 478; in Java, 814; in New S. Wales, 373; in U.S.A., 52, 473, 788; in Victoria, 279; physiology of, 279; study on, 279; transmission of, by soil, 478; varietal reaction to, 53, 814.
— — on tobacco, control, 554, 787;

factors affecting, 554; note on, 765; occurrence in Java, 481, 554, 555; in Sumatra, 279, 765; in U.S.A., 787; study on, 279; varietal reaction to, 554.
[*Bacterium solanacearum*] on tomato in Ceylon, 422; in Victoria, 279; physiology of, 279; study on, 279; varietal reaction to, 422.
— *striaefaciens* on barley and oats in U.S.S.R., 379.
— *tabacum* on tobacco, control, 576, 635, 764, 765, 785; factors affecting, 442, 553, 764; note on, 553; occurrence in Southern Rhodesia, 483, 784; in U.S.A., 442, 553, 576, 764; in U.S.S.R., 635; physiological variant of *Pseudomonas fluorescens*, 764; serological studies on, 445, 553; transmission of, by *Epitrix parvula*, 442.
— *tardicrescens* can infect *Belamcanda, Iris cristata, I. kaempferi, I. missouriensis, I. orientalis, I. sibirica*, and *I. tenax*, 31.
— — on iris in U.S.A., 31.
— *translucens* var. *undulosum* on wheat, breeding against, 665; note on, 662; occurrence in Sweden, 665; varietal reaction to, 665.
— *tumefaciens*, bacteriophage of, 158.
— —, bibliography of, 238.
— — can infect *Datura tatula*, 159, 160; *Pelargonium zonale*, 159; sunflower, 159, 160; sweet pea, 159; tomato, 159.
— —, effect of colchicin on, 445, 446; indoleacetic acid on, 446; digestive ferments on, 296, 511; hormones on, 238.
— — on apple, control, 160, 381; occurrence in Germany, 160.
— — on *Asparagus sprengeri* and bean in Germany, 159.
— — on beet in Holland, 154.
— — on cherry in U.S.S.R., 603.
— — on peach in U.S.A., 159.
— — on pear, control, 381.
— — on *Pelargonium*, chemical study on, 381; effect of papain and pepsin on, 296.
— — on *Piper guineense* in Kenya, 572.
— — on *Ricinus communis*, effect of hormones on, 238; potassium salts on, 729.
— — on sunflower, effect of apple aroma on, 790.
— —, physiology of, 159.
— —, review of work on, 238, 511.
— —, soil reaction in relation to control of, 382.
— *vasculorum*, host range of, 274, 374, 625, 710.
— — on *Dictyosperma album* in Mauritius, 374.
— — on maize in Mauritius, 374.
— — on sorghum in Italy, 517.
— — on sugar-cane, control, 623; occurrence in Barbados, 623–4; in Brazil, 619, 624; in Mauritius, 374, 625; in Queensland, 274, 624; varietal reaction to, 274, 619.
— — on *Thysanolaena agrostis* in Mauritius, 374.
[*Bacterium*] *vesicatorium*, effect of ultra-short radio waves on, 46.
— — on tomato, control, 421, 717; occurrence (?) in Japan, 717; in U.S.A., 421; in U.S.S.R., 379.
— *vignae* and its var. *leguminophilum* on cowpea in U.S.S.R., 379.
— *vitians* on lettuce in U.S.S.R., 379.
— *woodsii* on carnation in Bulgaria, 413; in Canada, 725.
— *xanthochlorum*, bacteriophage of, 445.
Bacteriorrhiza of lupin, mustard, oats, pea, and wheat in U.S.S.R., 128.
Bakerophoma sacchari on sugar-cane in the Philippines, 625.
Balladynella palmicola on oil palm in Sierra Leone, 820.
Bamboo (*Bambusa*, &c.), *Asterinella hiugensis, Asterotheca nigrocornis, Chaetosphaeria yosie-hidakai, Chaetosphaerulina yasudai, Coccodiella arundinariae, Leptosphaeria tigrisoides, Myriangium haraeanum*, and *Phragmothyrium semiarundinariae* on, in Japan, 204–5.
Banana (*Musa* spp.), *Bacterium solanacearum* on, in Haiti, 328.
—, *Botryodiplodia theobromae* on, in Japan, 41.
—, bunchy top of, in Fiji, 92.
—, *Ceratostomella paradoxa* on, in Japan, 41.
—, *Cercospora musae* on, control, 92, 124, 144, 192, 264, 328; factors affecting, 328; legislation against, in Colombia, 144; in St. Lucia, 640; occurrence in Colombia, 124, 144; in Costa Rica, 192; in the Dominican Republic, 560; in Fiji, 92; in Guatemala, 124; in Haiti, 327; in Honduras, 124, 193; in Jamaica, 92, 328; in Mexico, 124, 192; in New S. Wales, 264; in St. Vincent, 124; in Trinidad, 748, 807.
—, *Chloridium musae* on, in Haiti, 328.
—, *Corticium centrifugum* on, in Japan, 41, 264.
— disease (undetermined), legislation against, in the Dominican Republic, 560.
—, *Dothiorella* on, in Palestine, 263.
—, fertilizer injury to, 506.
—, *Fusarium* on, control, 327; occurrence in Japan, 41; in New S. Wales, 327; in S. Africa, 438.
—, — *oxysporum cubense* on, control, 327; occurrence in Canary Islands, 506; in Haiti, 327; in St. Lucia, 604.
—, *Gloeosporium musarum* on, control, 124, 327; factors affecting, 41; occurrence in Bulgaria, 413; in Fiji, 92; in Italian Somaliland, 124; in Japan, 41; in New S. Wales, 327.
—, green-ripeness of, in Japan, 41.
—, (?) *Helminthosporium torulosum* on, in Haiti, 328.
—, 'kaze-hiki' of, in Japan, 41.
—, *Macrophoma musae* on, in Japan, 41.
—, *Marasmius stenophyllus* on, in Haiti, 328.
—, *Nigrospora sphaerica* on, in New S. Wales, 327.

[Banana], 'plant failure' of, in Haiti, 327.
—, *Rhizoctonia bataticola* on, in Southern Rhodesia, 249.
—, *Rhizopus nigricans* on, in Japan, 41.
—, 'rubbery' disease of, in New S. Wales, 373.
—, *Scolecotrichum musae* on, in Fiji, 92; (?) in Haiti, 328.
—, sodium chloride injury to, 506.
—, *Stachylidium theobromae* on, in Haiti, 328.
— storage disorders in Trinidad, 747.
—, sun scald of, in Haiti, 328.
—, *Uromyces musae* on, in Fiji, 92.
—, virus disease of, in Haiti, 328.
—, — heart rot of, in Guadeloupe and Haiti, 328.
—, see also Plantain.
Barathra brassicae, use of Métalnikov's bacilli to control, 380.
Barbak C, use of, against seed-borne cotton diseases, 787.
Barberry (*Berberis*), *Aecidium haussknechtianum* on, in Italy, 741.
—, *Cumminsiella sanguinea* on, in England, 654.
—, *Puccinia graminis* on, eradication against, 165, 661; occurrence in U.S.A., 165; in Austria, 661.
—, *Verticillium* on, in U.S.A., 281.
Barium arsenate, use of, as a timber preservative, 220.
Barley (*Hordeum*), *Bacterium cerealium* and *Bact. striaefaciens* on, in U.S.S.R., 379.
—, *Cercosporella herpotrichoides* on, in England, 448.
—, *Erysiphe graminis*, genetics of resistance to, 515; occurrence in U.S.A., 388, 465, 515; varietal reaction to, 388, 515.
—, *Fusarium* on, in England, 446; in U.S.A., 93.
—, *Gibberella saubinetii* on, in U.S.A., 93, 388.
—, *Helminthosporium gramineum* on, breeding against, 666; occurrence in Italy, 580; in U.S.A., 388; in U.S.S.R., 666; varietal reaction to, 388, 666.
—, — *sativum* on, in U.S.A., 93.
—, *Naucoria cerealis* on, in U.S.A., 164.
—, *Nigrospora* on, in U.S.A., 93.
—, oat mosaic can infect, 297.
—, *Ophiobolus graminis* on, in Denmark, 385.
—, physiological disease of, in Germany, 98.
—, *Puccinia* on, in India, 511.
—, — *anomala* on, breeding against, 239; factors affecting, 666; occurrence in Australia, 239; in England, 387; in India, 90; in Portugal, 387, 666; in Spain, 387; in U.S.A., 388; physiologic races of, 239, 387, 666; varietal reaction to, 388, 666.
—, — *glumarum* on, occurrence in Bulgaria, 734; in Germany, 168, 734; in U.S.A., 583; overwintering of, 168; physiologic races of, 734; varietal reaction to, 584.
[Barley, *Puccinia*] *graminis* on, genetics of resistance to, 388; occurrence in Denmark, 88; in Germany, 383; in U.S.A., 388; varietal reaction to, 388.
—, reclamation disease of, copper deficiency in relation to, in Holland, 240, 241; in S. Australia, 163.
—, *Ustilago hordei* on, control, 170, 605; hybridization of, with *U. nigra*, 296; methods for inoculating, 296, 388; occurrence in Egypt, 170; in India, 585; in U.S.A., 388, 665; in U.S.S.R., 605; serological diagnosis of 162; varietal reaction to, 388; viability of, 585.
—, — *medians* on, in U.S.A., 388.
—, — *nigra* on, 296.
—, — *nuda* on, in Germany, 98, 242.
Basicop injury, 691.
—, use of, against *Alternaria solani* on potato, 237; against *Cercospora apii* on celery, 722; against *Coccomyces hiemalis* on cherry, 691; use of, against *Septoria apii-graveolentis* on celery, 722.
Basidiomycetes, review of the literature on sexuality in, 543.
Baumspritzmittel, use of, against potato virus diseases, 472.
Bayer neu, use of, against *Puccinia asparagi* on asparagus, 649.
Beans, *Bacterium fascians* can infect, 597.
—, — *flaccumfaciens* on, in U.S.A. and other countries, 497.
—, — *medicaginis* var. *phaseolicola* on, comparative study of *Bact. puerariae* and, 495; control, 366; occurrence in U.S.A., 366; in U.S.S.R., 495; serological studies on, 127, 495.
—, — *phaseoli* on, control, 366; losses caused by, 725; occurrence in U.S.A., 366, 725; in U.S.S.R., 127; serological study on, 127; varietal reaction to, 127.
—, — — var. *fuscans* on, in U.S.S.R., 495.
—, — *puerariae* on, in U.S.S.R., 495.
—, — *tumefaciens* on, in Germany, 159.
—, *Botrytis cinerea* on broad, in China, 291; in England, 295.
—, *Calonectria graminicola* var. *neglecta* on broad, in Germany, 831.
—, *Cercospora cruenta* on, in Malaya, 505.
—, clover (red) mosaic can infect, 600.
—, *Colletotrichum lindemuthianum* on broad, in China, 568.
—, *Corticium solani* on, 759; *Bacillus simplex* antagonistic to, 567; occurrence in Germany and Holland, 831; in U.S.A., 567.
—, curly top of beet virus affecting, control, 296; occurrence in U.S.A., 150, 296, 485; study on, 150; varietal reaction to, 296, 485.
—, damping-off of, in U.S.A., 440.
—, *Erysiphe polygoni* on, in U.S.A., 465.
—, *Fusarium avenaceum* on broad, in Germany and Holland, 831.
—, — *orthoceras* and *F. oxysporum* on broad, in Germany, 831.
—, — *solani* var. *martii* on, in Germany, 811; in U.S.A., 290.
—, — *vasinfectum* var. *lutulatum* on, in England, 779.

[Beans], *Gibberella fujikuroi* on broad, in the Sudan, 392.
—, low temperature injury to stored, in U.S.A., 723.
—, *Macrophomina phaseoli* on, in U.S.A., 286.
— mosaic, breeding against, 296; control, 288, 648; factors affecting, 288; occurrence in Germany, 197; in New S. Wales, 288; in New Zealand, 235, 648; in U.S.A., 290, 296, 430; study on, 289; transmission of, by *Brevicoryne brassicae*, 197; by *Macrosiphum pisi*, 290; by seed, 289, 648; varietal reaction to, 288, 289, 290, 296, 430, 648.
—, — of broad, host range of, 649; occurrence in China, 649; in England, 784; in Japan, 224; study on virus of, 224; transmission of, by *Aphis rumicis*, 649.
—, — -like variegation in, in U.S.A., 7.
—, pea virus 1 on broad, 287; in England, 784; in U.S.A., 288.
—, *Phytophthora parasitica* can infect broad, 742.
—, *Pisum* virus 3 can infect, 648.
—, potato yellow dwarf can infect broad, 270.
—, *Pseudoperonospora cubensis* can infect broad, 86.
—, *Pythium de Baryanum* on, in U.S.A., 291; on broad, in Germany and Holland, 831.
—, — *ultimum* can infect, 498.
—, *Rhizoctonia* on, in U.S.A., 77.
—, rosette of broad, in China, 608.
—, *Sclerotinia sclerotiorum* on broad, in England, 295.
—, — *trifoliorum* var. *fabae* on broad, 628.
—, *Sclerotium rolfsii* on, in U.S.A., 79.
—, tobacco brown root rot can affect, 716.
—, — necrosis can infect, 211.
—, — ring spot affecting, in Germany, 811.
—, *Uromyces appendiculatus* on, effect of, on host, 128; factors affecting, 48, 471; occurrence in Hawaii, 366; in U.S.A., 128, 442; physiologic races of, 366.
—, — *fabae* on broad, in China, 553; in Egypt, 567; in Venezuela, 141.
— virus 1, see Bean mosaic.
Beauveria, control of *Piesma quadratum* by, 107.
— *bassiana*, hosts of, in Germany, 735.
— — on *Leptinotarsa decemlineata* in U.S.A., 591.
— — on silkworms, 521, 735.
— —, penetration of chitin by, 380.
— —, use of, to control *Loxostege sticticalis*, 379; *Scolytus*, 557.
— *densa* on cockchafers, 107; geographical distribution of, 676; occurrence in Germany, 453.
— *globulifera*, bacteria in relation to staining of the medium by, 521.
Beech (*Fagus*), *Fomes pinicola* can infect, 2.
—, fungi associated with, ecology of, in England, 2.
[Beech], *Ganoderma applanatum* on, in U.S.A., 2.
—, *Pholiota aurivella* on, in Yugoslavia, 562.
—, *Phytophthora cambivora* on, in England, 282; susceptibility to, 825.
—, — *cinnamomi* on, susceptibility to, 825.
—, — *syringae* on, in England, 282; susceptibility to, 825.
—, *Polyporus balsameus* on, in U.S.A., 2.
—, — *glomeratus* on, in U.S.A., 487.
—, *Ustulina vulgaris* on, in Great Britain, 69, 638.
Beet (*Beta vulgaris*), *Aphanomyces* on, in U.S.A., 566.
—, — *cochlioides* on, in U.S.A., 158.
—, *Bacterium tumefaciens* on, in Holland, 154.
—, black heart of, in U.S.A., 76.
— canker, boron deficiency in relation to, in U.S.A., 817.
—, *Cercospora beticola* on, control, 6, 157, 365, 566, 647, 720, 721; effect of, on yield, 721; factors affecting, 6, 566, 646; incubation period of, 646; losses caused by, 722; mosaic in relation to infection by, 566; note on, 287; occurrence in Austria, 721; in Belgium, 79; in Canada, 6; in Czechoslovakia, 566; in Germany, 287; in Poland, 365; in U.S.A., 157, 566, 720, 721, 777, 831; in U.S.S.R., 647; varietal reaction to, 566, 777, 831.
—, *Corticium solani* on, control, 566; occurrence in Belgium, 79; in U.S.A., 5, 76, 494, 566, 567, 759, 776; variation in, 494.
— 'cracky yellows' in England, 226.
— crinkle in Germany, 287; in Poland, 107; transmission of, by *Piesma quadratum*, 107.
—, crown rot of, in U.S.A., 442.
— curly top, acquired tolerance of tobacco to, 823; attenuation of virus of, 225; breeding against, 287; control, 78; factors affecting, 77; note on, 287; occurrence in the Argentine, 238; in Germany, 287; in U.S.A., 78, 150, 225, 777, 823; studies on, 64, 77, 150, 225, 823; transmission of, by *Eutettix tenellus*, 77, 78, 225, 485; to celery, 369; varietal reaction to, 777; virus of, affecting bean in U.S.A., 150, 296, 485; *Cucurbita maxima* in U.S.A., 84; *Salsola kali-tenuifolia* in U.S.A., 78; tobacco in U.S.A., 142, 823; tomato in U.S.A., 64, 485, 824; wild hosts of, 225.
— damping-off in U.S.A., 440.
— diseases, Belgian book on, 287; Russian compilation of, 494.
— dry and heart rot, boron deficiency in relation to, 77, 79, 428, 430; control, 430; effect of, on nitrogen content, 78; occurrence in Belgium, 78, 79; in Canada, 430; in Germany, 428; in U.S.A., 76, 77; review of work on, 646.
—, *Fusarium* on, in England, 646; in U.S.A., 76.
— glassiness, boron deficiency in relation to, in Germany, 428.

[Beet], *Helicobasidium purpureum* on, in U.S.A., 76.
—, internal black spot of, in U.S.A., 366, 428.
—, — zoned rot of, in England, 646.
—, leaf injury of, boron deficiency in relation to, in U.S.A., 77.
—, *Macrophomina phaseoli* on, in U.S.A., 286.
—, (?) magnesium deficiency in, in Belgium, 79.
— mosaic, *Cercospora beticola* in relation to, 566; occurrence in England, 227; in Germany, 566; in Holland, 154; transmission of, to spinach, 154.
—, *Peronospora schachtii* on, in France, 79; in Palestine, 275; in U.S.A., 150.
—, *Phoma* on, in U.S.A., 441.
—, — *betae* on, control, 77, 567, 646; factors affecting, 646; note on, 5; occurrence in Belgium, 79; in Canada, 430; in England, 646; in U.S.A., 5, 76, 566, 776.
—, *Phymatotrichum omnivorum* on, in U.S.A., 76.
—, *Phytophthora drechsleri* on, in U.S.A., 76.
—, — *megasperma* on, in England, 646.
—, *Pseudoperonospora cubensis* can infect, 86.
—, *Pythium* on, in England, 646; in U.S.A., 76.
—, — *butleri* on, in U.S.A., 6; relationship of, to *Rheosporangium aphanidermatus*, 6.
—, — *de Baryanum* on, control, 566; factors affecting, 5; occurrence in Belgium, 79; in U.S.A., 5, 566, 766.
—, *Rhizoctonia* on, in England, 646; in U.S.A., 76.
—, *Sclerotium rolfsii* on, in U.S.A., 76.
—, soil acidity injury to, in England, 646.
—, 'speckled yellows' of, manganese deficiency in relation to, in England, 226.
— strangle disease in England, 646.
—, *Uromyces betae* on, in Belgium, 79; in U.S.A., 128.
—, (?) virus disease of, in the Argentine, 238.
—, 'wilty yellows' of, in England, 226.
— yellowing in England, 226.
— yellows, control, 79, 429; effect of, on nitrogen content, 78; occurrence in Belgium, 78, 79, 287; in Holland, 429; transmission of, by *Macrosiphum solanifolii* and *Myzus persicae*, 429; to spinach, 429.
Begonia, *Macrophomina phaseoli* on, in U.S.A., 286.
—, *Oidium begoniae* on, in England, 724; in Portugal, 711.
—, *Pseudomonas begoniae* on, *Bacterium flavozonatum* a synonym of, 740; occurrence in U.S.A., 740.
—, *Pythium de Baryanum*, *P. splendens*, and *P. ultimum* on, in U.S.A., 113.
—, *Sclerotium delphinii* can infect, 183.
Belamcanda, *Bacterium tardicrescens* can infect, 31.
Bemisia, transmission of cassava mosaic by, 231; (?) of tobacco pox by, 554.
(?) [*Bemisia*] *gossypiperda* transmitting tobacco leaf curl, 499.
Bentonite, use of, as an adhesive, 691.
Benzoic acid, use of, against *Ceratostomella paradoxa* on pineapple, 748.
Benzol, use of, against *Peronospora tabacina* on tobacco, 63, 349, 417, 418, 482.
Berberis, see Barberry.
Berkhoutia a subgenus of *Geotrichum*, 28.
Beta vulgaris, see Beet, Mangold.
Betula, see Birch.
Bidens tripartitus, *Sphaerotheca humuli* var. *fuliginea* on, in U.S.S.R., 615.
Bindarene flour, use of, as a spreader, 598.
Biotin, effect of, on fungi, 336; on mycorrhizal fungi, 470, 542.
—, use of *Lophodermium pinastri* and *Nematospora gossypii* for estimating, 542.
Birch (*Betula*), *Coenococcum graniforme* forming mycorrhiza on, 701.
—, *Fomes fomentarius* on, in Scotland, 214.
—, — *igniarius* on, in Alaska, 643.
—, — *pinicola* can infect, 2.
—, fungi on, in U.S.S.R., 145.
—, *Nectria coccinea* on, in U.S.A., 280, 558.
—, *Polyporus sulphureus* on, in U.S.S.R., 145.
—, *Poria* on, in U.S.A., 145.
—, — *obliqua* on, in Sweden and U.S.S.R., 146.
Birds, *Aspergillus* on, survey of, 591.
Bispora nigra on timber in Switzerland, 149.
Blackberry (*Rubus*), *Byssochlamys fulva* on, in England, 191.
—, *Corticium galactinum* on, in U.S.A., 321.
Black currants, see Currants.
Blastocystis gemmagina on man and (?) the monkey in Germany, 676.
— *hominis* on man, the monkey, pig, and rat in Germany, 676.
Blastodendrion braulti on man in Algeria, 178.
— *krausi* in bakers' yeast in Italy, 27.
Blastomyces [*Blastomycoides*] on man in Japan, 310.
Boehmeria nivea, *Ascochyta boehmeriae* on, in Italy, 114.
Boletus on pine forming mycorrhiza in Queensland, 502.
— *elegans*, effect of growth substances on, 542.
— *flavidus* on pine and spruce forming mycorrhiza in Sweden, 542.
— *granulatus* on pine forming mycorrhiza in Java, 406.
— *luteus* on pine forming mycorrhiza in New Zealand, 406.
— *subtomentosus* on pine forming mycorrhiza in Sweden, 542.
— *viscidus* on pine forming mycorrhiza in Queensland, 502.
Bombyx mori, see Silkworms.
Borax poisoning of citrus, 518.

[Borax], toxicity of, to *Penicillium digitatum* and *P. italicum*, 246.
—, use of, against boron deficiency disease of clover, lucerne, and *Melilotus alba*, 77; of potato, 269; against brown heart of swedes, 153, 364, 565; against cracking and die-back of pear, 155; against crown rot of beet, 442; against dry and heart rot of beet, 77, 428; against internal black spot of beet, 366, 428; against internal cork of apple, 117, 155; against leaf injury of beet, 77; against *Penicillium digitatum* and *P. italicum* on citrus, 246, 671; against pine needle fusion, 491; against staining of wood pulp, 363; as a timber preservative, 425.
Bordeaux mixture, effect of, on growth and yield of tomato, 351, 695; on transpiration, 403, 465.
— — injury, 325, 352, 443, 461, 691, 695, 744, 751, 785.
, retention of, on pear foliage, 462.
, use of, against copper deficiency in pear, 119.
paste, use of, as a wound dressing, 518.
Bordo-Xex, use of, against *Plasmopara viticola* on vine, 87.
Boric acid, use of, against beet canker, 817; against internal cork of apple, 117, 725; against lime-induced abnormalities in vegetables, 29; against lime-induced chlorosis of flax, 29; against lucerne yellow top, 817; against pine-apple 'crookneck', 503; against pine needle fusion, 491; against stem crack of celery, 817.
Boron applications, principles of, 428.
— as a plant nutrient, bibliography of, 199, 702.
— compounds, use of, against dry and heart rot of beet, 76; against brown heart of swedes, 565; against little leaf of fruit trees, 261; against pear cracking, 656; against sugar-cane mosaic, 623.
— deficiency in *Brassica* in Germany, 428; in broccoli, cabbage, and China aster, in U.S.A., 817; in clover in U.S.A., 77; in coffee in Java, 21; in maize in Germany, 307; in *Melilotus alba* in U.S.A., 77; in potato in Holland, 269; in potato in relation to leaf roll, 545; in *Salvia officinalis* in Java, 21; in vine, 372.
— in relation to apple measles, 785; to beet glassiness, in Germany, 428; to bitter pit of apple, 118; to drought spot of plum, 745; to dry and heart rot of beet, 77, 79, 428, 430; to leaf injury of beet, 77; to plant life, review of literature on, 613.
—, see also Borax, Boric Acid.
Boronite, use of, against brown heart of swedes, 565.
Botryodiplodia penzigii on poplar in Holland, 68.
pistaciae can infect *Pistacia terebinthus*, 331.
— — on *Pistacia vera* in Italy, 330.
[*Botryodiplodia*] *ribis* on currants in France, 325.
— *sorghi* on sorghum in Italy, 517.
— *theobromae* on banana in Japan, 41.
— — on cacao in Brazil, 93; in Colombia, 12.
— — on grapefruit in Trinidad, 193.
— — on *Hevea* rubber in Java, 579.
— — on pine in Holland, 358.
— — on sugar-cane in Brazil, 624.
— — on tea in Java, 579.
— —, synonymy of, 788.
Botryosphaeria ribis on avocado pear in Trinidad, 193.
— — on citrus in Dutch E. Indies, 794.
— — on *Ribes* in France, 325.
— — on *Salix* in U.S.A., 486.
— — var. *chromogena* on apple and avocado pear in Southern Rhodesia, 784.
— — — — on chestnut in U.S.A., 148.
— — — — on guava in Southern Rhodesia, 784.
— — — — on loquat in Hawaii, 658.
Botrytis on *Antirrhinum majus* in U.S.A., 741.
— on *Cassia obovata* in U.S.S.R., 477.
— on chestnut in Italy, 572.
— on *Gentiana lutea* in U.S.S.R., 477.
— on gladiolus in Holland, 154.
— on *Iris* in England, 31.
— on onion in Japan, 430.
— on *Trachyspermum copticum* in U.S.S.R., 477.
— *allii* on onion in New Zealand, 726; in U.S.A., 431.
anthophila on clover in Holland, 742; in U.S.S.R., 115.
— *byssoidea* on onion in Japan, 430.
— *cinerea* in relation to *Puccinia asparagi* in England, 778.
— — on *Abies grandis* in Holland, 358.
on apple in Denmark, 118, 119; in England, 743.
— — on broad bean in China, 291; in England, 295.
— — on carnation in the Argentine, 295.
— — on celery, host-parasite relationship of, 812.
— — on chrysanthemum in Germany, 510.
— — on citrus in U.S.S.R., 671.
— — on colza in Germany, 494.
— — on dahlia in the Argentine, 295.
— — on flax in Germany, 315.
— — on food in U.S.S.R., 468.
— — on horse-radish in Germany, 365.
— — on larch in Holland, 358.
— — on lettuce in Japan, 430.
— — on loquat in Greece, 10.
— — on oats in Canada, 725.
— — on onion in U.S.A., 430.
— — on orange in the Argentine, 295; in Japan, 430.
— — on pine in Holland, 358.
— — on *Pseudotsuga taxifolia* in Holland, 358.
on *Ribes* in France, 325.
— — on rose in the Argentine, 295; in England, 783.

[*Botrytis cinerea*] on strawberry in the Argentine, 295; in Canada, 191; in Japan, 430; in U.S.A., 402.
— — on vine, control, 232, 805; factors affecting, 805; occurrence in the Argentine, 295; in Germany, 510; in S. Africa, 332, 804.
— —, perfect stage of, 820.
— —, urea-forming enzyme of, 198.
— *elliptica* on lily in U.S.A., 443.
— *globosa* on garlic in Germany, 140.
— *paeoniae* on peony in Estonia, 655.
— *polyblastis*, *Sclerotinia polyblastis* the perfect stage of, 32.
— *squamosa* on onion in Japan, 430.
— *tulipae*, antagonism of *Actinomyces albus* to, 129.
— — on tulip, control, 30; occurrence in Bulgaria, 712; in Estonia, 655; in New Zealand, 726; in U.S.A., 30.
Bouisol, use of, against *Uromyces fabae* on bean, 568.
Boydia insculpta on holly in U.S.A., 529.
Brachiaria mutica, *Bacterium vasculorum* can infect, 274.
Brachypodium, *Septoria graminum* on, in Europe and U.S.A., 297.
Brachysporium on *Scorzonera ſtau-saghyz* in U.S.S.R., 137.
Brassica, boron deficiency in, in Germany, 428.
— *alba*, see Mustard.
— *campestris*, see Swedes, Turnip.
— — var. *oleifera*, see Colza.
— *chinensis* var. *oleifera*, *Pseudoperonospora cubensis* can infect, 86.
— *napus* var. *nippooleifera*, *Corticium centrifugum* on, in Japan, 205.
— — var. *oleifera*, see Rape.
— *nigra*, see Mustard.
— *oleracea*, see Broccoli, Brussels sprouts, Cabbage, Cauliflower.
— — var. *acephala*, see Kale.
— — var. *botrytis*, see Asparagus kale.
— — var. *caulo-rapa*, see Kohlrabi.
— *pekinensis*, see Cabbage, Chinese.
— *pe-tsai*, see Cabbage, Chinese.
— *sinapis*, see Charlock.
Bremia lactucae on *Centaurea imperialis* and *Gaillardia grandiflora* in Switzerland, 139.
— — on lettuce, control, 155; factors affecting, 8, 228, 471; occurrence in Germany, 7, 780; in New S. Wales, 155; in Palestine, 275; physiologic races of, 8; study on, 228; varietal reaction to, 7, 155.
— — on *Senecio elegans* in Switzerland, 139.
Brevicoryne brassicae transmitting bean mosaic, cabbage mosaic, and onion yellow dwarf, 197; turnip mosaic, 223.
Brevilegnia gracilis on pansy in Holland, 112.
Broad bean, see Bean.
Broccoli (*Brassica oleracea*), boron deficiency in, in U.S.A., 817.
—, *Cylindrosporium concentricum* on, in England, 654.
[Broccoli], *Plasmodiophora brassicae* on, in U.S.A., 427.
—, radish mosaic can infect, 427.
Bromus inermis, *Bacterium coronafaciens atropurpureum* on, in U.S.A., 11.
—, *Septoria bromi* on, in U.S.A., 11.
— —, — *bromigena* on, in U.S.A., 743.
Brussels sprouts (*Brassica oleracea*), radish mosaic can infect, 427.
Bryobia praetiosa transmitting *Alternaria mali* on apple, 38.
Buckwheat (*Fagopyrum esculentum*), little leaf of, in U.S.A., 43.
Buddleia variabilis, *Bacterium fascians* on, in Germany, 33.
Buildings, moulds on, in Great Britain, 334, 539.
'Bukuryô' in Japan identified as *Pachyma cocos*, 152.
Bunchy top, see under hosts.
Butter, *Aspergillus* on, in U.S.A., 595.
—, *Margarinomyces fasciculatus* and *M. hoffmannii* on, in Switzerland, 315.
—, *luteoviridis* on, in Czechoslovakia and Switzerland, 315.
—, *Mucor* on, in U.S.A., 595.
—, *Oospora lactis* on, in U.S.A., 595.
—, *Penicillium* on, in U.S.A., 595.
—, — *thomii* on, in Germany, 457.
—, *Tilachlidium butyri* on, in Denmark, 315.
Byssochlamys fulva on preserved fruits in England, 191.

Cabbage (*Brassica oleracea*), *Alternaria brassicae* on, in Brazil, 222; toxic action of, 49.
— black ring in U.S.A., 364.
—, boron deficiency in, in U.S.A., 817.
—, *Corticium solani* on, 759; in Germany, 832.
—, *Cystopus candidus* on, in Burma, 655.
—, *Moniliopsis aderholdi* on, in Germany, 720.
— mosaic in China, 608; in Germany, 197; transmission of, by *Brevicoryne brassicae*, 197.
—, *Olpidium brassicae* on, in England, 821; in Germany, 720.
—, *Peronospora parasitica* on, in New S. Wales, 234.
—, *Phoma lingam* on, in Germany, 494.
—, *Plasmodiophora brassicae* on, control, 443, 508, 728; occurrence in Germany, 508; in Palestine, 275; in U.S.A., 443, 728.
—, *Pythium de Baryanum* on, in Germany, 720.
—, radish mosaic can infect, 427.
—, turnip mosaic can infect, 223.
Cabbage, Chinese (*Brassica pekinensis*), *Pseudoperonospora cubensis* can infect, 86.
—, —, radish mosaic can infect, 427.
—, —, stock mosaic can infect, 459.
—, —, turnip mosaic can infect, 223.
Cacao (*Theobroma cacao*), (?) *Armillaria mellea* on, in Brazil, 93.
—, *Botryodiplodia theobromae* on, in Brazil, 93; in Colombia, 12.

[Cacao], *Calonectria bahiensis* on, in Brazil, 92.
—, *Colletotrichum* on, in Colombia, 12.
—, — *gloeosporoides* on, in Trinidad, 194.
—, *Corticium* (?) *lilaco-fuscum* on, in Brazil, 93.
—, — *salmonicolor* on, in Brazil, 93; in Sierra Leone, 156.
—, — *stevensii* on, in Brazil, 93.
—, *Diaporthe* (?) *citri* on, in Trinidad, 194.
— diseases, list of, 92.
—, *Marasmius perniciosus* on, legislation against, in St. Lucia, 768.
—, *Phytophthora palmivora* on, in Brazil, 92.
Cadmium, effect of, on *Tilletia caries* on wheat, 167.
Caffaro powder, use of, against *Gloeosporium musarum* on banana, 124.
Cajanus cajan, see Pigeon pea.
Calamagrostis, *Mastigosporium album* var. *calvum* on, in U.S.A., 34.
— *epigeios*, mosaic of, in U.S.S.R., 297.
— *lanceolata*, *Sclerotium rhizodes* on, in Sweden, 34.
Calceolaria, *Sclerotium delphinii* can infect, 183.
Calcium, effect of, on the growth of mushrooms, 229.
— nutrition in relation to *Urocystis tritici* on wheat, 791.
— arsenate, a constituent of cuprocide celite dust, 728.
— —, effect of, on Bordeaux mixture, 194.
— —, use of, as a timber preservative, 220.
— arsenite, use of, against *Sclerotinia laxa* on apricot, 120.
— cyanamide, use of, against damping-off of ornamentals and vegetables, 181; against *Helicobasidium purpureum* on *Acer campestre* and *Urtica dioica*, 479; against *Sclerotinia fructicola* on plum, 603; against *S. sclerotiorum* on celery, 789.
— deficiency in coffee, 21.
— — in cotton in relation to crinkle leaf, 23.
— — in potato in Holland, 545.
— excess in coffee, 21.
— hypochlorite, use of, as a seed disinfectant, 115, 228.
Caldariomyces fasciculatus on sugar-cane in Japan, 56.
Calendula officinalis, *Sphaerotheca humuli* var. *fuliginea* on, in U.S.S.R., 615.
Caliciopsis pinea on pine in N. America, 827.
Callistephus chinensis, see Aster, China.
Calonectria bahiensis on cacao in Brazil, 92.
— *diploa* parasitizing a diaspid scale insect in Malaya, *Fusarium juruanum* conidial stage of, 504.
— *graminicola* on grasses in Sweden, 298.
— — on rye in Sweden, 298, 516.
— — on turf in Sweden, 298.
— — var. *neglecta* on broad bean and vetch in Germany, 831.
Calyptospora goeppertiana on *Abies* spp., *Vaccinium pennsylvanicum*, *V. canadense*, and *V. vitis-idaea* var. *minus* in U.S.A., 491–2; taxonomy of, 491.
Camelina sativa, potash deficiency in, in Germany, 54.
Camellia japonica, *Exobasidium camelliae* on, pathological anatomy of, 528.
— *sinensis*, see Tea.
Campanula persicifolia, *Sclerotium delphinii* can infect, 183.
Candida, emended diagnosis of the genus, 253.
— on man in Panama Canal Zone, 179.
—, taxonomy of, 525.
— *albicans*, dissociation in, 394, 526.
— — in bakers' yeast in Italy, 27.
— — on the fowl in U.S.A., 738.
— — on carrot in Italy, 395.
— — on man, biochemical study on, 395; in Algeria, 178; in the Argentine, 178; in France, 739; in Holland, 178; in Syria, 179; in U.S.A., 592, 738; taxonomy of, 738.
— —, variation in, 394, 526.
— *macedoniensis* var. *macedoniensoides* referred to *Saccharomyces macedoniensis*, 525.
— *montpellieri* on man in Algeria, 178.
— *paratropicalis* on man in Algeria, 178.
— *pinoysimilis* on man in Italy, 313.
— *pseudotropicalis* imperfect stage of *Saccharomyces fragilis*, 525.
— *stellatoidea* on man in Norway, 592.
— *tropicalis* on man, dissociation in, 108.
Canna, *Musa textilis* mosaic can infect, 397.
Cannabis sativa, see Hemp.
Cantaloupe (*Cucumis melo*), *Erysiphe cichoracearum* on, in U.S.A., 151.
— mosaic in New Zealand, 726.
—, *Pisum* virus 3 can infect, 648.
—, *Pythium aphanidermatum* can infect, 781.
Capnodium on citrus in Dutch E. Indies, 794.
— *salicinum* in Australia, 627.
Cappaea taprobanensis transmitting *Nematospora coryli* on citrus, 795.
Capsella bursa-pastoris, cucumber virus 1 affecting, in Germany, 509, 803.
Capsicum annuum and *C. frutescens*, see Chilli.
Caraway (*Carum carvi*), celery mosaic can infect, 369.
—, *Cercospora cari* on, in Holland, 154.
Carbolineum, use of, against *Ceratostomella fimbriata* on *Hevea* rubber, 729; against *Coniophora puteana* on timber, 720; against *Merulius lacrymans* on timber, 720; against potato virus diseases, 472; against *Ustulina vulgaris* on lime tree, 1; as a timber preservative, 566.
— plantarium as a wound dressing, 795.
Carbon dioxide, effect of, on Jonathan spot of apples, 657; on stickiness and spotting of *Phaseolus lunatus*, 227; on storage disorders of apple, 187; of cherry, 691.

[Carbon]-nitrogen ratio in relation to reaction of apple to *Erwinia amylovora*, 37.
Carborundum, use of, in virus inoculations, 287.
Cardamine heterophylla, turnip mosaic affecting, in New Zealand, 234.
Cardamom (*Elettaria cardamomum*), *Cephalosporium* on, in India, 89, 233.
—, *Corticium solani* on, in India, 822.
—, 'katte raga' disease of, in India, 233.
— mosaic in India, 89, 233, 822.
Cardamom, Greater (*Amomum subulatum*), *Cephalosporium* on, in India, 233.
Carica papaya, see Papaw.
Carnation (*Dianthus caryophyllus*), *Bacterium fascians* on, 597.
—, — *woodsii* on, in Bulgaria, 413; in Canada, 725.
—, *Botrytis cinerea* on, in the Argentine, 295.
—, *Fusarium culmorum* on, in Bermuda, 505.
—, *Uromyces caryophyllinus* on, host parasite relationship of, 812.
—, — *dianthi* on, in Bermuda, 505.
—, *Ustilago violacea* on, in England, 783.
Carolinaia cyperi transmitting sugar-cane mosaic, 760.
Carpinus caroliniana, *Pezicula carpinea* on, *Cryptosporiopsis fasciculata* conidial stage of, 761.
Carrot (*Daucus carota*), *Alternaria radicina* on, in Bulgaria, 712; in Denmark, 573; renamed *Stemphylium radicinum*, 573.
—, *Armillaria mellea* on, in England, 724.
—, *Candida albicans* on, in Italy, 395.
—, celery mosaic affecting, in U.S.A., 369.
—, *Cercospora carotae* on, in Bulgaria, 413.
—, *Corticium solani* can infect, 759.
—, damping-off of, in U.S.A., 440.
—, *Erwinia carotovora* on, in Italy, 395.
—, lime-induced abnormalities in, in Switzerland, 29.
—, *Macrosporium carotae* on, in the Philippines, 444.
—, *Pseudomonas carotae* on, in Canada, 725.
—, *Pythium aphanidermatum* can infect, 781.
—, — *ultimum* can infect, 497.
—, *Sclerotinia sclerotiorum* on, in Italy, 395.
—, — *trifoliorum* on, 628.
—, *Sclerotium rolfsii* on, in the Philippines, 444.
—, *Septoria dauci* on, in France, 779.
Carthamus tinctorius, see Safflower.
Carum carvi, see Caraway.
Carya, see Hickory.
Casein as an adhesive, 377, 451, 786.
— as a spreader, 89, 720.
Cassava (*Manihot utilissima*), brown streak of, in East Africa, 373; in Tanganyika, 574; in Zanzibar, 374.
— mosaic, breeding against, 727; control, 152, 373; occurrence in East Africa, 373; in Tanganyika, 152, 230, 574; study on, 230; transmission of, by *Bemisia*, 231; varietal reaction to, 152.
[Cassava], *Phytophthora parasitica* var. *nicotianae* can infect, 419.
—, *Rhizoctonia solani* f. *paroketea* on, in the Dominican Republic, 58.
—, *Sphaerostilbe repens* on, in Malaya, 504.
—, *Verticillium dahliae* on, in Uganda, 575.
Cassia obovata, *Botrytis* on, in U.S.S.R., 477.
Castanea, see Chestnut.
Castor, see *Ricinus communis*.
Casuarina equisetifolia, *Clitocybe tabescens* on, in U.S.A., 789.
— —, mycorrhiza of, in India, 406.
Catalpa speciosa, *Verticillium albo-atrum* on, in U.S.A., 67.
Cattle, (?) *Rhinosporidium seeberi* on, in India, 454.
—, toxicity of *Claviceps paspali* on *Paspalum dilatatum* to, 460.
Cauliflower (*Brassica oleracea*), (?) *Bacterium maculicola* on, in Fiji, 92.
—, *Olpidium brassicae* on, in Wales, 821.
—, *Peronospora brassicae* f. *major* and *Plasmodiophora brassicae* on, in Palestine, 275.
—, radish mosaic can infect, 427.
—, *Sclerotium delphinii* can infect, 183.
—, turnip mosaic can infect, 223.
—, 'whiptail' of, in Fiji, 92.
Cedrus libani var. *deodara*, see Deodar.
Celeriac, see Celery.
Celery (*Apium graveolens*), *Alternaria radicina* on, in Denmark, 573; study on, 573; renamed *Stemphylium radicinum*, 573.
—, *Bacterium jaggeri* on, in U.S.S.R., 379.
—, beet curly top, can infect, 369.
—, *Botrytis cinerea* on, host parasite relationship of, 812.
—, calico disease of, in U.S.A., 369.
—, *Cercospora apii* on, in U.S.A., 722, 780.
—, *Corticium solani* can infect, 759.
— crinkle leaf in U.S.A., 369.
— low temperature injury in U.S.A., 723.
— mosaic, control, 78, 83; host range of, 369; occurrence in China, 608; in France, 292; in U.S.A., 78, 83, 369; study on, 369; transmission of, by aphids, 369; by *Aphis gossypii*, 292; by juice, 369; to cucumber, 292; virus of, affecting celeriac in U.S.A., 369.
—, ring spot of *Conium maculatum* can infect, 369.
—, *Sclerotinia sclerotiorum* on, host parasite relationship of, 812; occurrence in U.S.A., 789.
—, *Sclerotium delphinii* can infect, 183.
—, *Septoria apii* on, in Germany, 569; in U.S.A., 780.
—, — *apii-graveolentis* on, control, 291, 367, 722; occurrence in France, 367; in Tasmania, 291; in U.S.A., 722, 780; spore production by, 780.
—, stem crack of, in U.S.A., 817.
—, tomato spotted wilt affecting, in U.S.A., 369.
—, western mosaic of, see Celery mosaic.

[Celery] yellow spot in U.S.A., 369.
— yellows in U.S.A., 369.
Celite, use of, with cuprocide, 728.
Celtis australis, disease of, and *Taphrina celtidis* on, in France, 719.
Cenangium abietis on pine in Czechoslovakia, 490.
Centaurea imperialis, *Bremia lactucae* on, in Switzerland, 139.
Centrosema pubescens, *Fomes lignosus* on, in Dutch E. Indies, 136; in Malaya, 341.
Cephaleuros virescens on clove in Madagascar, 548.
Cephalosporium, effect of ultra-short radio waves on, 46.
— on *Abies* in N. America, 827.
— on cardamom in India, 89, 233.
— on greater cardamom in India, 233.
— on man in Germany, 180.
— on persimmon in U.S.A., 537.
— *acremonium* on maize, distinct from *C. gramineum*, 387; occurrence in Germany, Holland, and Italy, 387.
— *ciferrii* on paper in Italy, 696.
— *gramineum* on *Alopecurus agrestis* and wheat in Japan, 387.
— *keratoplasticum* on man in Japan, 524.
— *lecanii* can infect *Ceroplastis sinensis*, 380.
— — on *Coccus hesperidum* and *Saissetia olea*, 380.
— *pilifera* on pine and spruce in Poland, 488.
— *potronii*, see *Acremonium potronii*.
— *sacchari* on sugar-cane in Egypt, 625; in India, 500; in Philippine Islands, 625; referred to *Gibberella fujikuroi* var. *subglutinans*, 500.
Ceratophorum albizziae on *Albizzia falcata* and *A. sumatrana* in Java, 281.
— *setosum* can infect laburnum and lupin, 460.
— — on *Cytisus hybridus* and *C. scoparius* in Germany, 460.
— — on lupin in Estonia, 655; in Germany, 116.
Ceratostomella on wood pulp in Germany, 220.
— *coerulea* on timber, effect of, on resistance to decaying fungi, 829; occurrence in Finland, 564.
— *coerulescens* on pine and spruce in Poland, 488.
— *fimbriata* on *Hevea* rubber, control, 729, 816; factors affecting, 341, 342; occurrence in Malaya, 341, 342, 816; in Sumatra, 729.
— *ips* associated with *Ips* and *Myelophilus* in Poland, 488; in U.S.A., 772.
— *paradoxa* on banana in Japan, 41.
— — on pineapple in transit, 748.
— — on sugar-cane in Brazil, 624; in Egypt, 625; in the Philippines, 626.
— *penicillata* associated with *Ips* in Poland, 488.
— *piceae* on *Abies*, oak, pine, and spruce in Poland, 488.
— — on timber, factors affecting, 360; occurrence in Finland, 564.
— *pini* associated with *Ips* in Poland, 488.
[*Ceratostomella*] *ulmi* in soil in U.S.A., 213.
— — on elm, breeding against, 213, 558; control, 70, 71, 282, 557, 558, 641, 717; note on, 826; occurrence in England, 640, 771; in France, 826; in Holland, 71, 557, 558, 641; in Italy, 213; in Scotland, 640; in U.S.A., 70, 281, 282, 641, 717, 771; in U.S.S.R., 489; *Saperda tridentata* in relation to, 771; *Scolytus* spp. in relation to, 557, 772, 826; specific reaction to, 489, 557, 558, 640, 641; transmission of, by (?) *Hylesinus* spp., 641; by insects, 70.
—, see also *Ophiostoma*.
Ceratovacuna lanigera in relation to sooty moulds on sugar-cane, 56.
Cercoseptoria domingensis on *Melia azedarach* in the Dominican Republic, 58.
Cercospora apii on celery in U.S.A., 722, 780.
— *arachidicola* (*Mycosphaerella arachidicola*) on groundnut in U.S.A., 236, 433.
— *beticola* on beet, control, 6, 157, 365, 566, 647, 720, 721; effect of, on yield, 721; effect of temperature on incubation period of, 646; factors affecting, 6, 566; in relation to mosaic, 566; losses caused by, 722; note on, 287; occurrence in Austria, 721; in Belgium, 79; in Canada, 6; in Czechoslovakia, 566; in Germany, 287; in Poland, 365; in U.S.A., 157, 566, 720, 721, 777, 831; in U.S.S.R., 647; varietal reaction to, 566, 777, 831.
— *cari* on caraway in Holland, 154.
— *carotae* on carrot in Bulgaria, 413.
— *cichorii* on chicory in the Argentine, 478.
— *cladosporioides* on olive in Italy, 604.
— *coffeicola* on coffee in the Belgian Congo, 21; in Italian E. Africa, 22.
— *concors* on potato in Bulgaria, 413.
— *cruenta* on bean in Malaya, 505.
— *decolor* var. *macrospora* on *Martynia lutea* in Italy, 114.
— *epicoccoides* on *Eucalyptus globulus* and *E. rostrata* in the Argentine, 478.
— *kopkei* on sugar-cane in Burma, 155, 500; in India, 500; in the Philippines, 626.
— *longipes* on sorghum in Italy, 517.
— — on sugar-cane in Brazil, 624.
— *medicaginis* on lucerne in U.S.S.R., 397.
— *melongenae* on eggplant in the Philippines, 370.
— *musae* on banana, control, 92, 124, 144, 192, 264, 328; factors affecting, 328; legislation against, in Colombia, 144; in the Dominican Republic, 560; in St. Lucia, 640; occurrence in Colombia, 124, 144; in Costa Rica, 192; in Fiji, 92; in Guatemala, 124; in Haiti, 327; in Honduras, 124, 193; in Jamaica, 92, 328; in Mexico, 124, 192; in New S. Wales, 264; in St. Vincent, 124; in Trinidad, 748, 807.

[*Cercospora musae*] on *Musa*, legislation against, in the Dominican Republic, 560.
— — on plantain in Central and S. America, 329.
— *nicotianae* on tobacco, control, 483; factors affecting, 482; losses caused by, 483; note on, 765; occurrence in Java, 482, 555; in Southern Rhodesia, 483, 632; in Sumatra, 765.
— *personata* (*Mycosphaerella berkeleyii*) on groundnut, control, 236, 373, 433; development of perithecial stage of, 571; occurrence in India, 373; in the Philippines, 433; in U.S.A., 236, 433; overwintering of, 433.
— *petroselini* on parsley in Portugal, 711.
— *richardiaecola* on *Zantedeschia aethiopica* in S. Africa, 438.
— *roesleri* on vine in Cyprus, 91.
— *rosae* on rose in Cyprus, 91.
— *rosicola* on rose in the Dominican Republic, 58.
— *sacchari* on sugar-cane in Uganda, 576.
— *sorghi* on sorghum in Italy, 517.
— *tinosporae*, *Mycosphaerella tinosporae* perfect stage of, 57.
— *vaginae* on sugar-cane in Brazil, 624.
— *viciae* on *Lathyrus* in the Dominican Republic, 58.
Cercosporella gossypii on cotton in Uganda, 575.
— *herpotrichoides* on barley in England, 448.
— — on cereals, recent research on, 386.
— — on oats in England, 448.
— — on rye in Denmark, 385.
— — on wheat, control, 98, 385, 586; factors affecting, 15, 448, 586; occurrence in Denmark, 385; in England, 448; in France, 372; in Germany, 15, 98, 586.
— *narcissi* probably identical with *Ramularia vallisumbrosae*, 598.
— *theae*, hosts of, in India, 821.
— — on tea in India, 821.
Cereals, root rots of, review of work on, in Canada, 660; root development in relation to, 515.
Cerebella volkensii, *C. sorghi-vulgaris* synonym of, 57.
Ceresan, effect of, on mitosis of Gramineae, 164.
—, use of, against *Bacterium tumefaciens* on apple and pear, 161; against citrus albinism, 247; against *Corticium solani* on citrus, 794; on cotton, 105; against cotton diseases (seed-borne), 375, 787; against damping-off of cotton, 440; of tomato, 421; against *Gibberella fujikuroi* on rice, 88; against pea rots, 778; against *Phoma* on beet, 442; against *Pythium* and *Rhizoctonia*, 440; against sett rot of sugar-cane, 620; against wheat bunt, 14, 375.
— dip, use of, against *Pullularia pullulans* on peas, 495.
—, new improved, use of, against *Penicillium*, *Pullularia pullulans*, and *Rhizopus nigricans* on peas, 495; against seed-borne cotton diseases, 787; against wheat bunt, 301; as a seed disinfectant, 514.
[Ceresan] U 564, use of, against *Bacterium tumefaciens* in soil, 382; on apple and pear, 161.
— UT 1875, use of, against *Fusarium culmorum* on wheat, 94; against wheat bunt, 94.
Cereus peruvianus monstruosus, *Fusarium oxysporum* on, in Italy, 599.
Ceroplastes sinensis, *Cephalosporium lecanii* can infect, 380.
Cerotelium desmium on cotton in Colombia, 12; in Uganda, 575.
Chaetocladium jonesii in soil in Scotland, 137.
Chaetomium in relation to asthma and hay fever of man, 679, 799.
— *elatum* and *C. globosum* on paper in Italy, 696.
Chaetosphaeria yosie-hidakai and *Chaetosphaerulina yasudai* on bamboo in Japan, 205.
Chaetostylium fresenii on food in U.S.S.R., 468.
Chaetothyrium butleri, *Phaeosaccardinula butleri* renamed, 57.
Chalk, use of, as dust against potato mosaic, 377.
Chamaedaphne, *Chrysomyxa cassandrae* on, in U.S.A., 643.
Charlock (*Brassica sinapis*), *Septoria polyadelpha* on, in New S. Wales, 57.
Cheiranthus cheiri, see Wallflower.
Chelidonium, cucumber virus 1 affecting, in Germany, 509, 803.
Chelindea vittiger transmitting *Gloeosporium lunatum*, 810.
Chenopodium album, *Helicobasidium purpureum* on, in England, 654.
— —, *Matthiola incana* var. *annua* mosaic can infect, 459.
— —, *Tolyposporium leptideum* on, in Poland, 552; transferred to *Glomosporium*, 552.
— *capitatum*, (?) *Cystopus occidentalis* on, in U.S.A., 367.
Cherry (*Prunus avium* and *P. cerasus*), *Bacterium tumefaciens* on, in U.S.S.R., 603.
—, *Clasterosporium carpophilum* on, in Hungary, 535.
—, *Coccomyces hiemalis* on, control, 236, 261, 691, 785, 786; occurrence in U.S.A., 236, 261, 691, 785.
—, copper injury to, 536.
—, *Cylindrosporium* on, in New S. Wales, 746.
—, *Cytospora* on, in New S. Wales, 746.
—, dying-off of, in Switzerland, 122, 692.
—, little leaf of, in U.S.A., 36, 261.
—, *Monilia* on, see *Sclerotinia* on.
— mosaic in Bulgaria, 189; in U.S.S.R., 699.
—, narrow-striped variegation of, in Bulgaria, 189.
—, *Penicillium* on, in U.S.A., 691.
—, *Pezicula plantarium* on, in Germany, 507, 762.

[Cherry], *Phyllosticta prunicola* on, in Hungary, 535; renamed *Coniothyrium prunicolum*, 534.
—, plum pox affecting, in Bulgaria, 188.
—, *Polyporus schweinitzii* on, in Norway, 559.
—, *Pseudomonas cerasi* on, in U.S.A., 689.
—, — *mors-prunorum* on, control, 461, 746; occurrence in Denmark, 88; in England, 122, 461, (?) 654, 689; in Holland, 153; in New S. Wales, 746; study on, 122; varietal reaction to, 461.
—, — *prunicola* on, in England, 122, 689.
—, — *spongiosa* on, in Holland, 153.
—, *Puccinia pruni-spinosae* on, in U.S.A., 375.
—, *Rhizopus nigricans* on, in U.S.A., 691.
—, *Sclerotinia* on, in Germany, 401, 534; in U.S.A., 691.
—, — *fructicola* on, in U.S.A., 533.
—, — *fructigena* on, in Germany, 508.
—, — *laxa* on, control, 461; occurrence in England, 461; in Germany, 508, 603; in U.S.A., 533; overwintering of, 508; varietal reaction to, 603.
—, *Torulopsis pulcherrima* on, in Switzerland, 259.
Cheshunt compound, use of, against *Corticium solani* and *Pythium* on pansy and viola, 802; against *P. aphanidermatum* on tobacco, 785; against scorch of iris, 32; against sett rot of sugar-cane, 620.
Chestnut (*Castanea*), *Botryosphaeria ribis* var. *chromogena* on, in U.S.A., 148.
—, *Botrytis* on, in Italy, 572.
—, *Coryneum perniciosum* on, in Italy, 355.
—, *Cryptodiaporthe castanea* on, in U.S.A., 148.
—, *Diplodia* on, in U.S.A., 148.
—, *Endothia parasitica* on, in U.S.A., 354, 827.
—, *Mycosphaerella maculiformis* on, in Italy, 355.
—, *Penicillium crustaceum* on, in Italy, 355.
— —, *crustosum* on, in Bulgaria, 712.
—, *Phoma endogena* on, in Italy, 572.
—, *Phytophthora cambivora* on, control, 70, 355, 826; factors affecting, 283; occurrence in England, 282, 825; in Italy, 1, 70, 355; study on, 282; specific and varietal reaction to, 1, 70, 355, 825.
—, — *cinnamomi* on, in England, 282, 825.
—, — *syringae* on, 825.
—, *Rhacodiella castaneae* on, in Italy, 355.
—, *Sclerotinia pseudotuberosa* on, in Italy, 572.
— spoilage in Italy, 355.
—, *Trichothecium roseum* on, in Italy, 355.
Chick pea, see *Cicer arietinum*.
Chicory (*Cichorium intybus*), *Cercospora cichorii* on, in the Argentine, 478.
Chilli (*Capsicum annuum*), *Alternaria* on, in India, 500.
(?) —, *Cladosporium herbarum* on, in U.S.A., 354.
—, *Colletotrichum nigrum* on, in Austria, 57; in Hawaii, 658.
—, damping-off of, in U.S.A., 440.
[Chilli], *Fusarium vasinfectum* on, in India, 89.
— leaf curl, etiology of, 273; occurrence in Ceylon, 273, 432, 433.
—, low temperature injury of stored, in U.S.A., 722.
—, *Microdiplodia capsici* on, in Greece, 11.
—, *Oidiopsis taurica* on, in French Morocco, 83.
—, *Phytophthora capsici* on, in the Argentine, 85.
—, — *parasitica* can infect, 742.
—, potato virus X strain H differentiated on, 130.
—, *Pythium ultimum* can infect, 497.
—, *Sclerotium rolfsii* on, in U.S.A., 79.
—, tobacco brown root rot can affect, 716.
—, — pox affecting, in Java, 554.
—, *Verticillium albo-atrum* on, in U.S.A., 570.
—, — *dahliae* can infect, 575.
— 'woodiness' in U.S.S.R., 699.
Chloramine T, toxicity of, to *Penicillium digitatum* and *P. italicum* on citrus, 246.
Chloride of lime, a constituent of eusol solution, 796.
— —, use of, against *Marssonina panattoniana* on lettuce, 569; against stickiness and spotting of *Phaseolus lunatus*, 227.
Chloridium musae on banana in Haiti, 328.
Chlorine deficiency in potato, 545.
— excess symptoms in currants, 39.
—, toxicity of, to potato, 632.
2-Chloro-o-phenylphenol as a timber preservative, 285, 563.
Chloropicrin, use of, against *Fusarium bulbigenum* var. *lycopersici* on tomato, 439; against *Plasmodiophora brassicae* on cabbage, 443, 728; against *Pseudomonas campestris* on kale, 565.
Chlorosis of apple in Bulgaria, 746; in U.S.A., 702.
— of citrus in Dutch E. Indies, 794.
— of flax in Switzerland, 29.
— of *Gardenia veitchii* in U.S.A., 184.
— of lupin in Germany, 258, 530; in U.S.A., 702.
— of peach in Bulgaria, 746; in France, 35.
— of pear in Bulgaria, 746; in France, 36; in U.S.A., 702.
— of potato in U.S.A., 201.
— of rice, 702.
— of rubber in Ceylon, 655.
— of *Sorghum* (?) *bicolor* in Italy, 588.
— of sugar-cane, forms of, 237; occurrence in the Argentine, 237; in Egypt, 625; in Puerto Rico, 376.
— of vine in Austria, 87; in France, 435, 499; in Yugoslavia, 499; types of, 87.
—, banded, of sugar-cane in Brazil, 624.
—, lime induced, 29, 499, 530, 702.
Chromium, use of, against sugar-cane mosaic, 623.
— arsenate, use of, as a timber preservative, 220.
Chrysanthemum, *Bacterium fascians* can infect, 597.
—, *Botrytis cinerea* on, in Germany, 510.

[*Chrysanthemum*], cucumber virus 1 affecting, in England, 784.
—, *Pythium megalacanthum* on, in Holland, 154.
—, *Verticillium* on, host range of, 783; occurrence in England, 783.
—, — *albo-atrum* can infect, 783.
—, — *dahliae* on, 783; in Holland, 154.
— *cinerariaefolium*, *Sclerotinia minor* and *S. sclerotiorum* on, in U.S.S.R., 477.
— *indicum*, *Bacterium fascians* on, in Germany, 33, 317.
— *maximum*, *Bacterium fascians* on, in Germany, 33; in Sweden, 317.
— —, *Sclerotium delphinii* can infect, 183.
Chrysomyxa cassandrae on *Chamaedaphne* in Alaska, 643.
— *ledicola* on *Ledum groenlandicum*, *L. decumbens*, and spruce in Alaska, 643.
— *pyrolae* on *Pyrola* in Alaska, 643.
— — on *Pyrola rotundifolia* in India, 59.
— *weirii* on spruce in Canada, 725.
Chytridiales, technique for isolating, 809.
Cicadulina mbila transmitting maize streak, 245, 727.
Cicer arietinum, *Ascochyta rabiei* on, in India, 86.
— —, *Corticium* on, in Ceylon, 655.
— —, *Fusarium* on, in India, 500, 501, 780.
— —, *Uromyces ciceris-arietini* on, in France, 549.
Cichorium intybus, see Chicory.
Cicinnobolus cesatii parasitic on *Erysiphe* in U.S.A., 803; saprophytic growth of, 803.
Cinchona, *Armillaria mellea* on, in Sumatra, 578.
—, *Corticium salmonicolor* on, in Sumatra, 578, 729.
—, — *solani*, *Fomes noxius*, *Fusarium*, *Helminthosporium*, *Phyllostictina*, *Polyporus rubidus*, and *Poria* on, in Sumatra, 578.
—, *Rhizoctonia* on, and root rots of, in Sumatra, 729.
—, *Rosellinia arcuata* and *R. bunodes* on, in Sumatra, 578.
— stem rust in Sumatra, 729.
— *ledgeriana* and *C. succirubra*, stem rust of, in Sumatra, 579.
Cineraria (*Senecio cruentus*), (?) *Erysiphe cichoracearum* on, in Scotland, 459.
Circinella sydowi in soil in Scotland, 137.
Citric acid, use of, against vine chlorosis, 435.
Citron (*Citrus medica*), *Armillaria mellea*, *Colletotrichum gloeosporioides*, *Diaporthe citri*, *Diplodia*, *Deuterophoma tracheiphila*, *Phoma*, *Phytophthora*, and *Pseudomonas syringae* on, in Crete, 672.
Citrullus vulgaris, see Watermelon.
Citrus, albinism in, in Palestine, 247.
—, *Alternaria citri* on, in U.S.S.R., 671.
—, *Armillaria* on, in Dutch E. Indies, 794.
—, *Aspergillus glaucus* and *A. niger* on, in U.S.S.R., 671.
—, borax injury to, 518.
—, *Botryosphaeria ribis* on, in Dutch E. Indies, 794.
[Citrus], *Botrytis cinerea* on, in U.S.S.R., 671.
—, *Capnodium* on, in Dutch E. Indies, 794.
— chlorosis in Dutch E. Indies, 794.
—, *Cladosporium brunneoatrum*, *C. herbarum*, *Colletotrichum gloeosporioides* on, in U.S.S.R., 671.
—, copper deficiency in, in U.S.A., 518.
—, *Corticium salmonicolor* and *C. solani* on, in Dutch E. Indies, 794.
—, *Diaporthe citri* on, in the Argentine, 238; in U.S.S.R., 671.
— diseases, legislation against, in Algeria, 288; in Nyasaland, 640; list of, in Palestine, 518.
—, *Elsinoe fawcetti* on, in Dutch E. Indies, 794; in Sierra Leone, 156; in U.S.S.R., 671.
— exanthema in Dutch E. Indies, 794.
—, *Fomes lignosus* and *F. noxius* on, in Dutch E. Indies, 794.
—, *Fusarium* on, in Dutch E. Indies, 794.
—, — *anguoides*, *F. poae*, *F. sambucinum* f. 2, and *F. sublunatum* on, in U.S.S.R., 671.
—, *Gloeodes pomigena* on, in S. Africa, 796.
—, *Gloeosporium limetticolum* on, in Dutch E. Indies, 794.
— leprosis in U.S.A., 100.
—, manganese deficiency in, in U.S.A., 518, 672.
— mottle leaf in Nyasaland, 103; in Puerto Rico, 308. (See also zinc deficiency in.)
—, *Nematospora coryli* on, in Dutch E. Indies, 794; transmission of, by bugs, 795; to *Cyphomandra betacea* and tomato, 796.
—, *Oidium tingitaninum* on, in Dutch E. Indies, 794.
— oleocellosis in Dutch E. Indies, 794.
—, *Oospora citri-aurantii* on, in Dutch E. Indies, 794; transmission of, by *Othreis fullonia*, 796.
—, *Penicillium crustaceum* on, in U.S.S.R., 671.
—, — *digitatum* on, control, 246, 589, 671; occurrence in Australia, 657; in French Morocco, 246; in New S. Wales, 726; in S. Africa, 589; in U.S.A., 246; in U.S.S.R., 671; *Oospora citri-aurantii* stimulating, 390; toxicity of certain chemicals to, 246.
—, — *italicum* on, control, 246, 671; occurrence in Australia, 657; in French Morocco, 246; in New S. Wales, 726; in U.S.A., 246; in U.S.S.R., 671; toxicity of certain chemicals to, 246.
—, *Phoma citricarpa* and *P. hesperidum* on, in U.S.S.R., 671.
—, *Phytophthora* on, in U.S.S.R., 671.
—, — *citrophthora* on, in U.S.A., 450, 518; technique for isolation of, 450.
—, — *parasitica* on, in Dutch E. Indies, 794; in U.S.A., 450, 518; technique for isolation of, 450.
—, *Pseudomonas citri* on, eradication of,

from S. Africa, 103, 438; occurrence in Dutch E. Indies, 794.
[Citrus, *Pseudomonas*] *citriputeale* on, in U.S.S.R., 671.
— psorosis, control, 248, 518, 735; occurrence in S. Africa, 438; in U.S.A., 100, 248, 518, 735; specific reaction to, 100; study on, 100; transmission of, by grafting, 100, 248; types of, 100.
—, *Rhizopus* on, in U.S.S.R., 671.
— ring spot in S. Africa, 101.
— root rot in Dutch E. Indies, 794.
—, *Rosellinia arcuata* and *R. bunodes* on, in Dutch E. Indies, 794.
—, *Septoria citri* on, in U.S.S.R., 671.
— storage disorders in U.S.S.R., 671.
— sun scorch in Dutch E. Indies, 794.
—, *Trichoderma lignorum* and *Trichothecium roseum* on, in U.S.S.R., 671.
— xyloporosis in Palestine, 101.
—, zinc deficiency in, in U.S.A., 518. (See also mottle leaf of.)
Citrus aurantiifolia, see Lime.
— *aurantium* and *C. bigaradia*, see Orange.
— *decumana* and *C. grandis*, see Grapefruit.
— *limonia*, see Lemon.
— *medica*, see Citron.
— *nobilis*, see Orange.
— *paradisi*, see Grapefruit.
— *poonensis*, see Orange.
— *sinensis*, see Orange.
— *tankan*, see Orange.
Cladosporium in relation to asthma of man, 354.
— in the upper air, 44.
— on buildings in Great Britain, 334.
— on cotton fabrics in New S. Wales, 726.
— on passion fruit in New Zealand, 331.
— on peach in Canada, 535.
— on *Scorzonera tau-saghyz* in U.S.S.R., 137.
— *aecidiicola* on pear in Bulgaria, 413.
— *brunneoatrum* on citrus in U.S.S.R., 671.
— *carpophilum* on peach in Brazil, 401; in U.S.A., 785.
— *cucumerinum* on cucumber, breeding against, 723; factors affecting, 652; genetics of resistance to, 723; occurrence in Germany, 508, 651; in U.S.A., 723; varietal reaction to, 651.
— *fulvum* in relation to asthma of man, 354.
— — on tomato, breeding against, 353; *C. fulvum* var. *violaceum* and *C. solani* synonyms of, 354; control, 637, 769, 784; factors affecting, 142, 769; occurrence in Bulgaria, 413; in England, 784; in Italy, 280; in New S. Wales, 637; in U.S.A., 142, 353, 354, 769; physiology of, 352; viability of, 142.
— — var. *violaceum* synonym of *C. fulvum*, 354.
— *guanicensis* on *Argemone mexicana* in the Dominican Republic, 58; transferred to *Polythrincium*, 58.
— *herbarum* in relation to asthma of man, 354.
[*Cladosporium herbarum*] in the upper air, 44.
— — on apple in Switzerland, 119.
— — on cereals in Italy, 580.
— — on (?) chilli in U.S.A., 354.
— — on citrus in U.S.S.R., 671.
— — on food in U.S.S.R., 468.
— — on meat in U.S.A., 255.
— — on *Phaseolus lunatus* in U.S.A., 227.
— — on timber in U.S.A., 285.
— — on tomato in U.S.A., 354; *C. lycoperdinum* and *C. lycopersici* (?) synonyms of, 354.
— *paeoniae* on peony in the Argentine, 478.
— *solani* synonym of *C. fulvum*, 354.
— *wernecki* on man in Cuba, 593.
Clasterosporium carpophilum on almond, apricot, cherry, peach, and plum in Hungary, 535.
— *maydicum* on grapefruit in Trinidad, 193.
Claviceps on sugar-cane in the Philippines, 625.
— *paspali* on *Paspalum*, isolation of the active principle of, in U.S.A., 529.
— — on *Paspalum dilatatum* in Hawaii, 658; in New S. Wales, 460; in S. Africa, 460; toxicity of, to livestock, 460.
— — on *Paspalum orbiculare* in Hawaii, 658.
— *purpurea* on rye, commercial production of, in Hungary, 314.
— — on *Zizania aquatica* in Canada, 725.
Clay, use of, as a dust against potato mosaic, 377.
Clitocybe tabescens on *Casuarina equisetifolia* in U.S.A., 789.
Clitopilus prunulus, effect of growth substances on, 542.
— — on pine forming mycorrhiza in Sweden, 542.
'Cloramina', use of, against chestnut spoilage, 355.
Clove (*Eugenia caryophyllata*), 'apoplexy' of, and *Cephaleuros virescens* on, in Madagascar, 548.
—, *Ganoderma* on, in India, 90.
—, *Mycosphaerella caryophyllata* on, root rot of, and sooty moulds on, in Madagascar, 548.
—, 'sudden death' of, in East Africa, 374; in Zanzibar, 615.
Clover (*Trifolium*), *Alternaria* on, in U.S.S.R., 115.
—, bacteria on seed of, in U.S.S.R., 115.
—, boron deficiency in, in U.S.A., 77.
—, *Botrytis anthophila* on, in Holland, 742; in U.S.S.R., 115.
—, broad bean mosaic can infect, 649.
—, *Erysiphe polygoni* on, in U.S.A., 319.
—, *Fusarium* on, in U.S.S.R., 115.
—, *Kabatiella caulivora* on, in U.S.S.R., 600.
— mosaic in China, 608; in England, 784.
—, — of red, aphid vectors and hosts of, in Japan, 600.
—, *Mucor* on, in U.S.S.R., 115.
— mycorrhiza in Italy, 471.

[Clover], pea virus 1 affecting, in U.S.A., 288.
—, *Phleospora trifolii* var. *recedens* on, renamed *Stagonospora recedens*, 320.
—, *Pisum* virus 3 can infect, 648.
—, potato yellow dwarf can infect, 270.
—, *Pseudomonas fluorescens* on, in U.S.A., 554.
—, (?) *Pythium* on, in Germany, 116.
—, *Rhizoctonia solani* var. *ambigua* on, immunization against, 543, 757.
—, *Sclerotinia trifoliorum* on, factors affecting, 319; losses caused by, 318; occurrence in Germany, 318, 684; in Sweden, 299, 684; physiologic races of, 684; studies on, 318, 628; varietal reaction to, 684.
—, (?) *Stemphylium botryosum* on, immunization against, 543, 757.
—, — *sarcinaeforme* on, 717; in Canada, 725; in England, 141; in U.S.A., 725; *Thyrospora sarcinaeforme* renamed, 141.
—, *Typhula trifolii* on, in Sweden, 299.
— virus 1 affecting pea in U.S.A., 6.
Coal tar, mineral, as a timber preservative, 357.
— —, see also Creosote, Tar.
Cobalt chloride, use of, against reclamation disease, 163; against rosette of pine, 643.
— deficiency of crops in Western Australia, 547.
— nitrate, use of, against citrus albinism, 247.
Coccidioides immitis, metabolism of, 179.
— — on man, control, 800; diagnosis of, 527; occurrence in the Argentine, 800; in Europe and N. and S. America, 29; in U.S.A., 179, 180, 394 594, 800; review of literature on, 594.
Coccids, see Scale insects.
Coccobacillus on cockchafer, 107.
Coccodiella arundinariae on bamboo in Japan, 204.
Coccomyces hiemalis on cherry, control, 236, 261, 691, 785, 786; occurrence in U.S.A., 236, 261, 691, 785.
Coccus hesperidum, *Cephalosporium lecanii* on, 380.
Cochlearia armoracia, see Horse-radish.
Cochliobolus stenospilus, see *Helminthosporium stenospilum*.
Cochlonema bactrosporum on *Heleopera sylvatica* in U.S.A., 454.
— *fusisporum* on decayed matter in U.S.A., 798.
— *megalosomum* on *Amoeba verrucosa* in U.S.A., 454.
— *pumilum* on decayed matter in U.S.A., 798.
Cockchafer (*Melolontha*), *Bacillus melolonthae* on, 107.
—, *Beauveria densa* on, 107; geographical distribution of, 676; occurrence in Germany, 453.
—, *Coccobacillus* and *Cordyceps militaris* on, 107.
Coco-nut (*Cocos nucifera*), *Gloeosporium* can infect, 89.
— wilt in British Guiana, 104.
Coco-nut oil, use of, as an adhesive, 192, 451.
Cocos plumosa, *Penicillium vermoeseni* on, in U.S.A., 451; synonymy of, 451.
Coenococcum graniforme, *Mycelium radicis nigrostrigosum* (?) identical with, 701.
— — forming mycorrhiza on birch, pine, *Salix repens*, and spruce in Sweden, 701.
Coffee (*Coffea*), *Armillaria mellea* on, in Java, 452.
—, *Bacterium* on, in the Belgian Congo, 21.
—, black bean of, in India, 105.
—, boron deficiency in, in Java, 21.
—, calcium deficiency and excess in, 21.
—, *Cercospora coffeicola* on, in the Belgian Congo, 21; in Italian E. Africa, 22.
—, *Colletotrichum coffeanum* on, see *Glomerella cingulata* on.
—, *Corticium salmonicolor* on, in the Belgian Congo, 21.
— diseases in the Belgian Congo, 506.
—, Elgon die-back of, in Kenya, 438.
—, *Fomes lignosus* on, in the Belgian Congo, 21; in Dutch E. Indies, 136, 137.
—, — *noxius* on, in Sumatra, 579, 728.
—, *Fusarium* (?) *coffeicola* on, in the Belgian Congo, 21.
—, *Glomerella cingulata* on, in the Belgian Congo, 21; in Italian E. Africa, 519.
—, (?) *Hemileia coffeicola* on, in W. Africa, 711.
—, — *vastatrix* on, in the Belgian Congo, 21; in India, 735; in Italian E. Africa, 22; in Tanganyika, 21; varietal reaction to, 22.
—, iron, magnesium, and nitrogen deficiencies in, 21–2.
—, non-parasitic diseases of, in Tanganyika, 519.
—, *Omphalia flavida* on, host range of, 589; occurrence in Costa Rica, 589.
—, phosphorus deficiency and excess in, 22.
—, potassium deficiency in, 22.
—, pseudonodules of, 22.
—, *Rhizoctonia* on, in Tanganyika, 21.
—, sodium chloride excess in, 22.
—, sulphur deficiency and excess in, 22.
—, (?) tomato spotted wilt affecting, in Brazil, 452.
— top die-back in Sumatra, 729.
Coix lacryma-jobi, *Bacterium vasculorum* can infect, 374.
Colchicin, effect of, on *Bacterium tumefaciens* tumours, 445, 446.
Colchicum aureum, *Aecidium colchici-aurei* on, in India, 59.
Coleosporium crowellii on pine in U.S.A., 2.
— *vernoniae* on pine in U.S.A., 424.
— — on *Vernonia baldwini*, *V. fasciculata*, *V. missurica*, and *V. noveboracensis* in U.S.A., 424.
Colletotrichum on cacao in Colombia, 12.
— on cotton in Manchukuo, 266.
— on cucumber in S. Africa, 438.
— on *Durio zibethinus* in Malaya, 504.
— on grapefruit in Sierra Leone, 156.

[*Colletotrichum*] on passion fruit in S. Africa, 438.
— on *Piper betle* in India, 234.
— on *Tripteris* in S. Africa, 438.
— *agaves* on *Furcraea* in Colombia, 12.
— *andropogonis* on sorghum in Italy, 517.
— *atramentarium* on flax in Germany, 315.
— — on potato, legislation against, (revised) in Java, 813; occurrence in Denmark, 88; in Java, 813; potassium deficiency in relation to, 88.
— *bakeri*, *Vermicularia bakeri* renamed, 57.
— *circinans* on onion in New S. Wales, 501.
— *coffeanum*, see *Glomerella cingulata*.
— *falcatum* on *Erianthus giganteus*, *Sorghum*, and *S. halepense* in U.S.A., 344.
— — on sugar-cane, *Diatraea saccharalis* in relation to, 344; factors affecting, 344; nature of resistance to, 619; occurrence in the Argentine, 237; in Brazil, 619; in Egypt, 625; in Philippines, 625; in U.S.A., 344, 619; varietal reaction to, 344, 619.
— *fructus*, antagonism of *Actinomyces albus* to, 129.
— *gloeosporioides* on avocado pear in Trinidad, 193.
— — on cacao in Trinidad, 194.
— — on citron in Crete, 672.
— — on citrus in U.S.S.R., 671.
— — on grapefruit in Trinidad, 193.
— — on lily in Bermuda, 506.
— — on orange in Dutch E. Indies, 795.
— — on papaw and tomato in Trinidad, 194.
— —, see also *Glomerella cingulata*.
(?) — *gossypii* var. *cephalosporioides* on cotton in Brazil, 798.
— *graminicolum* on sorghum in Italy, 517.
— *heveae* on *Hevea* rubber in Sumatra, 579.
— *humuli* on hops in U.S.A., 548.
— *lagenarium* on cucurbits in New S. Wales, 368.
— — on vegetable marrow in the Azores, 711.
— *lindemuthianum*, antagonism of *Actinomyces albus* to, 129.
— — on broad bean in China, 568.
— *lini* on flax, antagonism of soil micro-organisms to, 111; occurrence in Germany, 315; in U.S.S.R., 256; serological study on, 127; varietal reaction to, 127.
— *nigrum* on chilli in Austria, 57; in Hawaii, 658.
— *phomoides* on tomato in Canada, 725; in Hawaii, 658.
— *spinaciae* on spinach in Denmark, 572.
Colloidal copper, use of, against *Gloeosporium* on orange, 20; against *Pythium* on tobacco, 420. (See also Bouisol.)
— sulphur, toxicity of, to *Sclerotinia fructicola*, 444.
— —, use of, against *Gloeosporium musarum* on banana, 125; against *Oidium* on *Piper betle*, 156; against *Puccinia antirrhini* on *Antirrhinum majus*, 457; against *Puccinia triticina* on wheat, 95; against *Venturia inaequalis* on apple, 461.
Colocasia, *Phytophthora colocasiae* on, in Malaya, 505.
— *esculenta*, *Pythium* on, in Hawaii, 657.
— —, vascular necrosis of, in Hawaii, 658.
Colza (*Brassica campestris* var. *oleifera*), *Alternaria brassicae* on, in Germany, 493.
—, *Botrytis cinerea* and *Erysiphe communis* on, in Germany, 494.
—, *Hypochnus solani* var. *brassicae* can infect, 493.
—, — — var. *typica* on, in Germany, 493.
—, *Peronospora parasitica* on, in Germany, 494.
—, *Phoma lingam* on, in New Zealand, 494.
—, potash deficiency in, in Germany, 54.
—, *Sclerotinia sclerotiorum* and *Typhula* on, in Germany, 494.
—, virus disease of, in Germany, 811.
—, winter injury of, in Germany, 494.
Condensat, use of, against *Tilletia caries*, *Ustilago avenae*, and *U. hordei* on cereals, 605.
Conifers, *Armillaria mellea* on, in Great Britain, 361.
—, *Coryneum cardinale* on, in New Zealand, 492.
—, damping-off of, in Holland, 357.
—, *Fomes annosus*, *F. demidoffii*, *F. officinalis*, *F. pini*, *Polyporus schweinitzii*, and *P. sulphureus* on, in Great Britain, 361.
—, *Polystictus abietinus* on, enzyme production by, 219
—, *Stereum sanguinolentum* on, in Great Britain, 361.
Coniophora on timber in Finland, 564.
— *cerebella*, see *C. puteana*.
— (?) *olivacea* on pine and spruce in Norway, 559.
— *puteana* on *Sequoia gigantea* in Scotland, 425.
— — on timber, control, 220, 720, 830; effect of sap-stain on resistance to, 829; factors affecting, 75, 360; occurrence in Great Britain, 75, 362; in Southern Rhodesia, 785; in Sweden, 220; in U.S.A., 830; in U.S.S.R., 720; production of oxalic acid by, 426; specific reaction to, 221; toxicity of creosote to, 286; of hydrogen sulphide to, 644; use of, in tests of preservatives, 829; X-ray study on, 563.
Coniosporium perottianum on paper in Italy, 696.
Coniothecium chomatosporum on apple in England, 461; in Southern Rhodesia, 784; physiological disease formerly attributed to, 461.
Coniothyrium on elm in U.S.A., 281.
— on strawberry in Canada, 191; in England, 809.
— (?) *concentricum* on *Furcraea* in Colombia, 12.

[*Coniothyrium*] *pityophilum* on pine in Holland, 358.
— *prunicolum* on almond, apricot, cherry, and plum in Hungary, 535; *Phyllosticta prunicola* transferred to, 534.
— *tirolense* on apple, 507.
Conium maculatum, ring spot of, can infect celery, 369.
Coposil, use of, against *Alternaria solani* on potato, 237; against *Coccomyces hiemalis* on cherry, 785.
Copper, detection of, in rain water from sprayed trees, 462, 753.
— injury to peach, 536.
— in soil of vineyards, 232.
— arsenate, use of, as a timber preservative, 220.
— carbonate, use of, against pear exanthema, 120; against *Sphacelotheca sorghi* on sorghum, 392; against wheat bunt, 12, 14, 90, 301, 375; as a cotton seed treatment, 373.
— chloride, use of, against citrus albinism, 247; against pear exanthema, 120.
— compounds, effect of, on plants, 232; on set of apple fruits, 686.
— —, use of, against reclamation disease of oats, 667; against sugar-cane mosaic, 623; to disinfect pea seed, 495.
— deficiency in citrus in U.S.A., 518; in oats and potatoes in Western Australia, 547.
— — in relation to pear exanthema, 119; to reclamation disease, 88, 163, 240, 241; to soil bacteria, 240.
— — in soils of Western Australia, 547.
— fungicides, toxicity of, to *Sclerotinia fructicola*, 443.
— hydro, use of, against *Alternaria solani* on potato, 237.
— hydroxide, use of, against *Hemileia vastatrix* on coffee, 21.
— —, colloidal, use of, against *Plasmopara beticola* on vine, 781.
— injury to fruit trees, 461, 536; to tomato, 352.
— 'KB', use of, against *Pythium* and *Rhizoctonia*, 440.
— -lime dusts, use of, 6, 31, 92, 191, 329, 566.
— nitrate, use of, against pear exanthema, 120.
— oxalate, effect of, on seedlings, 182; use of, against *Bacterium juglandis* on walnut, 423.
— oxide, red, a constituent of cuprocide 54, 443.
— —, —, injury caused by, 598.
— —, —, technique for testing, 538.
— —, —, use of, against *Alternaria solani* on tomato, 443; against damping-off, 332; of peas, 236; against *Peronospora tabacina* on tobacco, 349, 417, 482; as a pea seed treatment, 236, 778.
— oxychloride injury, 443.
— —, toxicity of, to *Sclerotinia fructicola*, 444.
— —, use of, against *Cercospora beticola* on beet, 721; against *Coccomyces hiemalis* on cherry, 785; against *Elsinoe veneta* on loganberry and raspberry, 325; against wheat bunt, 12.
[Copper] phosphate, use of, against *Coccomyces hiemalis* on cherry, 691; against pear exanthema, 120.
— slag, use of, against reclamation disease of mangolds, oats, and rye, 667.
— stearate, use of, as disinfectant for pea seed, 495.
— sulphate as a timber preservative, 426.
— —, effect of, on *Phymatotrichum omnivorum*, 176.
— —, localization of, in sprayed vine leaves, 10.
— — soil treatment against *Bacterium solanacearum* on tobacco, 787; against reclamation disease, 163, 240.
— —, basic, injury caused by, 598.
— —, monohydrated, use of, against *Cercospora apii* and *Septoria apii-graveolentis* on celery, 722.
— tartrate, use of, against pear exanthema, 120.
— zeolite, injury caused by, 598.
—, see also Cupric, Cuprous.
Copra, see Coco-nut.
Coprinus urticaecola on wheat, *C. brassicae* and *C. phaeosporus* synonyms of, 665; occurrence in Canada, 665.
Corchorus, see Jute.
Cordyceps, *Stilbella* parasitizing, in England, 737; *Tilachlidiopsis nigra* in relation to, 737.
— *hesleri* in U.S.A., 798.
— *militaris* on cockchafer, 107.
— *smithii* in U.S.A., 798.
— *thaxteri* in U.S.A., 798; perfect stage of *Hymenostilbe arachnophila*, 798.
Corethropsis hominis on man in the British Navy, 677.
Coriandrum sativum, celery mosaic can infect, 369.
Corikal N, use of, as a spreader, 440.
Cornus, *Corticium galactinum* on, in U.S.A., 321.
—, *Nectria coccinea* can infect, 280.
—, *Pezicula corni* on, *Cryptosporiopsis cornina* conidial stage of, 761.
Corticium on *Cicer arietinum* in Ceylon, 655.
— on timber in Finland, 564.
— on *Volvaria diplasia* in Burma, 156.
— *centrifugum*, host range of, in Japan, 205.
— — on banana in Japan, 41, 264.
— *galactinum*, hosts of, in U.S.A., 321.
— *invisum* on tea in India, 822.
— *koleroga* on areca palm in India, 451.
— (?) *lilaco-fuscum* on cacao in Brazil, 93.
— *salmonicolor* on cacao in Brazil, 93; in Sierra Leone, 156.
— - - on *Cinchona* in Sumatra, 578, 729.
— — on citrus in Dutch E. Indies, 794.
— — on coffee in Belgian Congo, 21.
— — on *Desmodium ovalifolium* in Malaya, 342.
— — on *Furcraea* in Colombia, 12.
— — on grapefruit in Sierra Leone, 156.
— — on *Hevea* rubber in Malaya, 341, 342.

[*Corticium salmonicolor*] on pepper in Sumatra, 729.
— *sasakii* on rice, 617.
— *solani*, effect of growth substances on, 336.
— —, host range of, in U.S.A., 759.
— — on *Agrostis stolonifera* in U.S.A., 318.
— — on bean, *Bacillus simplex* antagonistic to, 567; occurrence in Germany and Holland, 831; in U.S.A., 567.
— — on beet, control, 566; occurrence in Belgium, 79; in U.S.A., 5, 76, 494, 566, 567, 759, 776; variation in, 494.
— — on cabbage in Germany, 832.
— — on cardamom in India, 822.
— — on *Cinchona* in Sumatra, 578.
— — on citrus in Dutch E. Indies, 794.
— — on cotton, biochemical study on, 674; control, 105, 787; occurrence in the Belgian Congo, 248; in India, 249, 674; (?) in the Sudan, 391; in U.S.A., 25, 105, 787.
— — on cucumber in England, 783.
— — on *Cynodon dactylon* in U.S.A., 616.
— — on eggplant in the Philippines, 370.
— — on groundnut in U.S.A., 788.
— — on lucerne in U.S.A., 759; in U.S.S.R., 398.
— — on lupin in Germany, 116, 832.
— — on ornamentals in U.S.A., 181.
— — on pansy in England, 802; in Holland, 112.
— — on peas in Germany, 831; in U.S.A., 495.
— — on pine in Holland, 358; in U.S.A., 561, 786.
— — on potato, control, 135, 544, 545, 577, 612; factors affecting, 52; note on, 815; occurrence in Colombia, 12; in Denmark, 88; in France, 372; in Germany, 544, 545; in Norway, 412; in U.S.A., 52, 136, 577, 612, 759, 815; in U.S.S.R., 611.
— — on rice in U.S.A., 616.
— — on soy-bean in Germany, 832.
— — on sugar-cane in the Philippines, 626; in U.S.A., 616.
— — on tobacco in Queensland, 502; in Southern Rhodesia, 483.
— — on vegetables in U.S.A., 181.
— — on vetch in Germany, 832.
— — on viola in England, 802.
— — on wheat in Victoria, 97.
— — on *Zinnia* in New S. Wales, 501.
— —, see also *Hypochnus solani*, *Rhizoctonia solani*.
— *stevensii* on cacao in Brazil, 93.
Cortinellus shiitake, cultivation of, 434.
Corylus avellana, *Bacterium* (?) *juglandis* on, in U.S.A., 424.
— —, diseases of, 398.
Coryneum cardinale can infect juniper, *Libocedrus decurrens*, *Thuja occidentalis*, *T. orientalis*, and *T. plicata*, 149.
— — on conifers in New Zealand, 492.
— — on *Cupressus* in U.S.A., 149, 492, 562; specific reaction to, 149, 562; studies on, 149, 492.
— — on *Juniperus*, *Libocedrus*, and *Thuja* in U.S.A., 492.
[*Coryneum*] *microstictum* imperfect stage of *Griphosphaeria corticola*, 597.
— (?) *myristicae* on nutmeg in Malaya, 505.
— *perniciosum* on chestnut in Italy, 355.
Cosmos sulphureus, *Macrophomina phaseoli* on, in Sierra Leone, 157.
Cotoneaster horizontalis, *Phytophthora cactorum* on, in Canada, 726.
Cotton (*Gossypium*), *Alternaria* on, blue stain caused by, 308; control, 573; factors affecting, 573; occurrence in the Belgian Congo, 248; in S. Africa, 573; in U.S.A., 308, 520; study on, 308; varietal reaction to, 573.
—, *Bacillus gossypinus* on, in Colombia, 12.
—, *Bacterium malvacearum* on, bacteriophage of, 249; breeding against, 574; control, 105, 391, 573, 787; factors affecting, 23, 390, 520; genetics of resistance to, 796; occurrence in Anglo-Egyptian Sudan, 574; in Colombia, 12; in Japan, 249; in S. Africa, 573; in Sudan, 23, 390, 796; in Uganda, 574, 575; in U.S.A., 105, 520, 787; transmission of, by seed, 23; study on, 23; varietal reaction to, 574, 796; variants of, 575.
—, *Cercosporella gossypii* on, in Uganda, 575.
—, *Cerotelium desmium* on, in Colombia, 12; in Uganda, 575.
—, *Colletotrichum* on, in Manchukuo, 266.
—, (?) — *gossypii* var. *cephalosporioides* on, in Brazil, 798.
—, *Corticium solani* on, biochemical study on, 674; control, 105, 787; occurrence in the Belgian Congo, 248; in India, 249, 674; (?) in the Sudan, 391; in U.S.A., 25, 105, 787.
—, 'crazy top' of, in the Argentine, 390.
— crinkle leaf in U.S.A., 23.
—, *Cylindrocarpon didymum* on, in the Sudan, 391.
—, damping-off of, in U.S.A., 25, 440.
—, *Diplodia gossypina* on, in the Belgian Congo, 248; in U.S.A., 25, 520.
— diseases, legislation against, in Algeria, 288.
—, *Eremothecium ashbyi* on, 308.
—, *Fusarium* on, control, 787; occurrence in India, 501; in Uganda, 574; in U.S.A., 25, 520, 787.
— — *buharicum* on, 250.
—, — *scirpi* var. *compactum* on, in the Sudan, 392.
—, — *vasinfectum* on, control, 787, 797; factors affecting, 106, 452; occurrence in the Belgian Congo, (?) 248, 797; in Burma, 156; in India, 89; in Peru, 25; in U.S.A., 24, 25, 106, 452, 787; physiologic races of, 89; varietal reaction to, 24, 106, 452, 787.
—, *Gibberella fujikuroi* on, in U.S.A., 25, 105, 519, 787.
—, — *saubinetii* on, in Colombia, 12.
—, *Glomerella gossypii* on, control, 105, 373, 787; factors affecting, 373; occurrence in the Belgian Congo, 248; in

India, 373; in U.S.A., 25, 105, 175, 519, 787; variation in, 175; varietal reaction to, 373.
[Cotton], internal bacterial rot of, in the Belgian Congo, 248.
—, — boll disease of, review of work on, 308.
— leaf curl in the Sudan, 391; in U.S.S.R., 698.
—, *Macrophomina phaseoli* on, biochemical study on, 674; occurrence in the Belgian Congo, 248; in India, 250, 674; in the Sudan, 391; in U.S.A., 25, 286; serological study on, 250.
— mosaic in the Belgian Congo, 248; in Brazil, 520.
—, *Nematospora coryli* on, note on, 308; occurrence in the Belgian Congo, 248, 797; in Tanganyika, 574; varietal reaction to, 797.
—, — *gossypii* on, note on, 308; occurrence in the Belgian Congo, 248, 797; in Tanganyika, 574; varietal reaction to, 797.
—, — *nagpuri* on, 308; in India, 309.
—, (?) *Neocosmospora vasinfecta* on, in the Belgian Congo, 248.
—, *Phymatotrichum omnivorum* on, control, 439, 590; distribution of, 674; effect of, on yield, 106; factors affecting, 106, 590; germination of sclerotia of, 674; occurrence in U.S.A., 76, 106, 439, 590, 674.
—, *Phytophthora parasitica* can infect, 742.
—, potash deficiency disease of, in U.S.A., 24.
—, *Pseudoperonospora cubensis* can infect, 86.
—, *Puccinia schedonnardi* on, in U.S.A., 392.
—, *Pythium* on, in U.S.A., 25, 787.
—, — *afertile*, *P. gracile*, and *P. proliferum* on, in the Sudan, 391.
— red rot in the Belgian Congo, 248.
—, *Rhizoctonia* on, in the Sudan, 391.
—, *Rhizophagus* on, forming mycorrhiza in Egypt and India, 796.
— 'rust' in U.S.A., 24.
—, *Sclerotium rolfsii* on, (?) in the Belgian Congo, 248; in U.S.A., 25.
—, *Spermophthora gossypii* on, 308.
—, tobacco brown root rot can affect, 716.
—, *Trichothecium roseum* on, in the Argentine, 478.
— vein mosaic in Brazil, 520.
—, *Verticillium* on, in Peru, 25.
—, (?) — *albo-atrum* on, in the Belgian Congo, 248; in Greece, 26.
—, — *dahliae* on, in Uganda, 574, 575; in U.S.S.R., 127; physiology of, 250; serological study on, 127; varietal reaction to, 127, 574.
— wilt in the Sudan, 391.
—, 'XT' fungus on, in the Sudan, 391.
—, textile, moulds on, in New S. Wales, 726.
Cottonseed oil, effect of, on transpiration of sprayed leaves, 466.
— —, use of, with Bordeaux mixture, 461.
Cottonwood (*Populus*), *Septoria musiva* on, in Canada, 771.
Court-noué of vine, see under Vine.
Cowpea (*Vigna unguiculata*), *Bacterium vignae* and its var. *leguminophilum* on, in U.S.S.R., 379.
—, *Fusarium vasinfectum* on, in India, 89.
— mosaic in China, 608.
—, *Sclerotium rolfsii* on, in U.S.A., 79.
—, tobacco brown root rot can affect, 716.
—, — necrosis can affect, 211.
—, *Uromyces vignae* on, in Cyprus, 91.
Cranberry (*Vaccinium*), *Diaporthe vaccinii* on, in U.S.A., 403.
Crataegus, *Gymnosporangium* on, in U.S.A., 354.
Creosote, use of, as a timber preservative, 220, 286, 493, 563, 564, 656, 829.
—, see also Coal Tar, Tar.
Crepis capillaris, *Marssonina panattoniana* on, in England, 569.
Cresol, use of, against potato virus diseases, 472.
Cress, see *Lepidium sativum*.
Cresylic acid, use of, against sett rot of sugar-cane, 620.
Crocus, *Sclerotium tuliparum* on, in England, 724.
Cronartium asclepiadeum on pine, nomenclature of, 73.
— — on *Vincetoxicum officinale*, 644.
— *coleosporioides*, *C. comandrae*, and *C. comptoniae* on pine in America, 73.
— *flaccidum*, *C. asclepiadeum* preferred as a name for, 73.
— *gentianeum* on *Gentiana asclepiadea*, genetic connexion between *Peridermium* and, 644; occurrence in Austria, 644; in Europe, 73.
— *occidentale* on pine in America, 73.
— *quercuum* on pine in America, 73.
— *ribicola* on currants, nature of resistance to, 324; occurrence in Switzerland, 424; in U.S.A., 323; in U.S.S.R., 39; varietal reaction to, 323.
— — on pine, annual growth rate of cankers of, in U.S.A., 72; control, 73, 359, 424; factors affecting, 216; legislation against, in U.S.A., 80; occurrence in Canada, 216; in Europe, 73; in N. America, 827; in Switzerland, 424; in U.S.A., 3, 73, 216, 359, 562; *Ribes* eradication against, 359; study on, 216; varietal reaction to, 3.
— — on *Ribes* in U.S.A., 3, 562; specific reaction to, 3, 772.
— — on *Ribes petiolare*, 149; in U.S.A., 216.
Crotalaria, *Maravalia crotalariae* on, in Malaya, 505.
— *anagyroides*, *Fomes lignosus* on, in Dutch E. Indies, 136.
juncea, *Fusarium* on, in India, 501; in Uganda, 575.
— —, phyllody of, in India, 181.
— —, *Uromyces decoratus* on, in Japan, 141.
— *saltiana*, *Fusarium* on, in Uganda, 575.
— —, phyllody of, in India, 181.

[*Crotalaria saltiana*], *Verticillium dahliae* can infect, 575.
— *striata*, see *C. saltiana*.
Cryptocline taxicola on yew in Scotland, 75; *Gloeosporium taxicola* synonym of, 75.
Cryptococcus gotoi synonym of *Debaryomyces neoformans*, 395.
— *haematicon* and *C. haematophilus* on man in the Argentine, 594.
— *hominis* on man in Europe, 29.
— *hondurianus* and *C. psichrofilicus* synonyms of *Debaryomyces neoformans*, 395.
Cryptodiaporthe, emendation of the genus, 414.
— *castanea* on chestnut in U.S.A., 148.
Cryptonol, use of, against *Bacterium solanacearum* on tobacco, 554; against *Colletotrichum heveae* on rubber, 579; against *Fusarium* and *Phyllosticta heveae* on rubber, 579; against *Ustilago avenae*, 17.
Cryptosporiopsis conidial stage of *Pezicula hamamelidis*, 761.
— *cornina* conidial stage of *Pezicula corni*, 761.
— *fasciculata* conidial stage of *Pezicula carpinea*, 761.
— *perennans*, *Gloeosporium perennans* renamed, 762.
Ctenomyces bossae on man in Yugoslavia, 456.
Cucumber (*Cucumis sativus*), *Cladosporium cucumerinum* on, factors affecting, 652; genetics of resistance to, 723; occurrence in Germany, 508, 651; in U.S.A., 723; varietal reaction to, 508, 651.
—, *Colletotrichum* on, in S. Africa, 438.
—, *Corticium solani* on, in England, 783.
—, damping-off of, *Bacillus simplex* in relation to, 567; occurrence in U.S.A., 567.
—, effect of Bordeaux mixture on, 695.
—, *Erysiphe cichoracearum* on, in Germany, 651; in U.S.A., 465.
— mosaic, inactivation of virus of, by chemical compounds, 266; occurrence in France, 292; in New Zealand, 726; in Puerto Rico, 229; study on, 229; transmission of, by *Aphis gossypii*, 292; to celery, 292; to tulip, 318; virus of, affecting lily in U.S.A., 318; tobacco in U.S.S.R., 631. (See also Cucumber virus 1.)
—, *Pisum* virus 3 can infect, 648.
— pitting in U.S.A., 722.
—, *Pseudoperonospora cubensis* on, in Japan, 86.
—, *Pythium aphanidermatum* can infect, 781.
—, *Sporodesmium mucosum* var. *pluriseptatum* on, in Germany, 652.
— virus 1 on *Aquilegia vulgaris* in Germany, 509, 803.
— — — on (?) *Brassica oleracea* var. *botrytis* in England, 784.
— — — on *Capsella bursa-pastoris* and *Chelidonium* in Germany, 509, 803.
[Cucumber virus 1] on China aster in Germany, 803.
— — — on chrysanthemum in England, 784.
— — — on cucumber and *Datura stramonium* in Germany, 803.
— — — on *Eryngium planum* and *Galinsoga parviflora*, 509, 803.
(?) — — — on hyacinth and lily in England, 182.
— — — on lupin in England, 784; in Germany, 509, 803; transmission of, by *Aphis rhamni*, 509, 803; by *A. rumicis*, *Myzus persicae*, and *M. pseudosolani*, 803.
— — — on *Scabiosa maritima* var. *atropurpurea* and *Senecio elegans* in Germany, 509, 803.
— — — on spinach in England, 647; in Germany, 509, 803.
— — — on *Stellaria media* in Germany, 509, 803.
— — — on sweet pea in England, 784.
— — — on tobacco in Germany, 803.
— — — on tomato in England, 783; in Germany, 509, 803.
(?) — — — on tulip in England, 182.
— — — on vegetable marrow in England, 647, 783.
— — — on *Viola tricolor*, wallflower, and *Zinnia* in Germany, 509, 803.
— viruses 3 and 4, nature of nucleoproteins of, 44.
Cucumis melo, see Cantaloupe, Melon.
— *sativus*, see Cucumber.
Cucurbita, see Squash.
— *maxima*, beet curly top virus affecting, in U.S.A., 84.
— *pepo*, see Vegetable marrow.
Cucurbits, *Colletotrichum lagenarium* on, in New S. Wales, 368.
—, damping-off of, in U.S.A., 440.
—, *Sphaerotheca humuli* var. *fuliginea* on, in Japan, 84.
Cumminsiella sanguinea on barberry in England, 654.
Cunninghamella, monograph on, 342.
— *bertholletiae* and *C. elegans* in soil, 342.
Cuprammonium, use of, against *Peronospora tabacina* on tobacco, 64.
Cupressus, *Coryneum cardinale* on, in U.S.A., 149, 492, 562; specific reaction to, 149, 562; studies on, 149, 492.
Cupric chloride, use of, against wheat bunt, 12.
— sulphur, use of, against *Uncinula necator* on vine, 153.
Cuprinol, use of, against moulds on cotton fabrics, 726.
Cuprispora Mantov, use of, against *Cercospora beticola* on beet, 721.
Cupro, use of, against *Alternaria solani* on potato, 237.
— K, use of, against *Coccomyces hiemalis* on cherry, 691, 785; against (?) *Septoria acicola* on pine, 786.
Cuprocide, effect of spreaders on, 440.
—, use of, against *Alternaria solani* on tomato, 728; against damping-off of various plants, 421, 440; against

Diplocarpon rosae on rose, 440; against *Phytophthora infestans* on tomato, 728; against *Pythium* and *Rhizoctonia*, 440; against seed-borne cotton diseases, 787.
[Cuprocide] 1, composition of, 722.
— —, use of, against *Cercospora apii* and *Septoria apii-graveolentis* on celery, 722.
— 54, composition of, 443.
— —, injury caused by, 598.
— —, use of, against *Alternaria solani* on tomato, 421, 443; against damping-off of tomato, 421; against *Rhizoctonia* on tomato, 421; against *Septoria lycopersici* on tomato, 421.
Cupromaag, use of, against *Plasmopara viticola* on vine, 87.
Cuprous oxide, toxicity of, to *Sclerotinia fructicola*, 444.
— —, use of, against *Corticium koleroga* on areca, 451; against *Phytophthora infestans* on potato, 759.
— — and cottonseed oil, effect of, on transpiration of sprayed leaves, 466.
Cupryl, use of, against *Plasmopara viticola* on vine, 87.
Curly top of beet, see under Beet.
Currants (*Ribes* spp.), *Botryodiplodia ribis* on, in France, 325.
—, *Cronartium ribicola* on, in Switzerland, 424; in U.S.A., 323; in U.S.S.R., 39; varietal reaction to, 323.
—, *Diaporthe pungens* on, in France, 325.
—, *Diatrype ribis* on, in France, 325.
—, leaf scorch of, in Germany, 39.
—, mosaic-like disease of, in U.S.A., 536.
—, *Mycosphaerella grossulariae* on, in Wales, 262.
—, *Phomopsis ribis* on, *Eutypa lata* var. *ribis* the perfect stage of, 324; *Libertella ribis* (?) identical with, 324; occurrence in France, 324.
—, *Pseudopeziza ribis* on, in England, 746.
—, reversion of, in U.S.S.R., 377, 700.
Curvularia lunata on avocado pear, grapefruit, and mango in Trinidad, 193.
— — on rice in U.S.A., 546.
— — on sorghum in Italy, 517.
— *ramosa* on wheat in Victoria, 97.
Cyclamen persicum, *Gloeosporium cyclaminis* on, in the Argentine, 478.
Cydonia vulgaris, see Quince.
Cylindrocarpon on strawberry in England, 809.
— *didymum* on cotton in the Sudan, 391.
— — on pine in Holland, 358.
— *radicicola* on *Gloxinia* in Holland, 154.
— — on pine in Holland, 358.
Cylindrosporium on cherry in New S. Wales, 746.
— *concentricum* on broccoli in England, 654.
— *pisi* on peas in French Morocco, 289.
Cynara cardunculus, *Oidiopsis taurica* on, in French Morocco, 83.
— *scolymus*, see Artichoke.
Cynodon dactylon, *Corticium solani* on, in U.S.A., 616.
Cyphomandra betacea, *Nematospora coryli* can infect, 796.
Cypress, see *Cupressus*.
Cystopus candidus on cabbage in Burma, 655.
— — on horse-radish in Germany, 365.
— — on radish, factors affecting, 228, 471.
— — f. *brassicae nigrae* on mustard in Palestine, 275.
— — f. *resedae*, see *C. resedae*.
— *cubicus* on salsify in Bermuda, 506.
(?) — *occidentalis* on *Chenopodium capitatum* and spinach in U.S.A., 367.
— *portulacae* on *Portulaca oleracea* in Palestine, 275.
— *resedae* on *Reseda alba* in Palestine, 275.
Cytidia flocculenta on *Salix* in Alaska, 643.
Cytisus hybridus, *Ceratophorum setosum* on, in Germany, 460.
— *laburnum*, see *Laburnum vulgare*.
— *scoparius*, *Ceratophorum setosum* on, in Germany, 460.
Cytospora on cherry in New S. Wales, 746.
— on poplar in N. America, 827; in U.S.A., 354.
— on *Salix* in U.S.A., 354.
— on spruce in N. America, 827.
— *chrysosperma* on *Salix* in Alaska, 642.
— *decorticans* pycnidial form of *Valsa decorticans*, 72.
sacchari on sugar-cane in India, 139; in U.S.A., 618.
— *taxifolia*, pycnidial stage of *Sphaerulina taxi*, 74.
— *taxifoliae*, referred to *Valsa friesii*, 74.
Cytosporina on apple in relation to gummosis in S. Australia, 121.

Dactylaria brochopaga in soil in France, 251.
— *candida* and *D. thaumasia*, control of *Heterodera marioni* on pineapple by, 737.
Dactylella bembicodes can attack *Ankylostoma duodenale* and *Strongyloides fülleborni*, 310.
— — in soil in France, 251.
— — on nematodes, 675, 676.
— — on *Strongylus* and *Trichonema*, 520.
— *ellipsospora*, control of *Heterodera marioni* on pineapple by, 737.
— — in soil in France, 251.
— — on nematodes, 676.
— — on *Strongylus* and *Trichonema*, 520.
Dactylis glomerata, *Mastigosporium album* var. *calvum* on, in U.S.A., 34.
Dactylium dendroides on mushroom in Germany, 779.
Daedalea gibbosa, see *Trametes gibbosa*.
— *quercina* on forest trees in U.S.A., 280.
— —, spore discharge in, 215.
— *unicolor*, effect of growth substances on, 335.
Daffodil, see *Narcissus*.
Dahlia, *Botrytis cinerea* on, in the Argentine, 295.
—, *Entyloma dahliae* on, in the Argentine, 478; in New Zealand, 726.

[*Dahlia*] mosaic in China, 608.
—, *Pseudoperonospora cubensis* can infect, 86.
—, *Sclerotium delphinii* can infect, 183.
—, tomato spotted wilt affecting, in S. Africa, 112.
Daldinia concentrica on timber in U.S.A., 356.
(?) — — on *Xiphydria prolongata* in England, 26.
Damping-off of cotton in U.S.A., 25, 440.
— of cucumber, *Bacillus simplex* in relation to, 567; occurrence in U.S.A., 567.
— of pea, *Bacillus simplex* in relation to, 567; occurrence in U.S.A., 236, 440, 567.
— of plants, control of, in U.S.A., 332, 440.
— of sweet pea, control, 181.
—, see also *Phytophthora*, *Pythium*, *Rhizoctonia*, and other fungi.
Daphne mezereum, *Thielaviopsis basicola* on, in England, 724.
— *odora*, *Sclerotium delphinii* on, in U.S.A., 529.
Darluca filum on cereal rusts in U.S.S.R., 581.
— — on *Puccinia asparagi* in England, 778.
Dasyscypha willkommii on larch in Holland and Rumania, 74.
Date palm (*Phoenix dactylifera*), blight of, in U.S.A., 20.
—, *Diplodia* on, in U.S.A., 451.
—, *Fusarium* (?) *lateritium*, *F.* (?) *semitectum*, *Gibberella fujikuroi*, and *Helminthosporium* on, in U.S.A., 20.
— spoilage in U.S.A., 104.
Datura fastuosa, eggplant virus can infect, 90.
— *metel*, mosaic of, in China, 608.
— *stramonium*, as a test plant for potato virus B, 410.
— —, cucumber virus 1 affecting, in Germany, 803.
— —, 'gloss disease' of, in Germany, 196.
— —, tomato tip blight can infect, 351, 420.
— *tatula*, *Bacterium tumefaciens* can infect, 159, 160.
Daucus carota, see Carrot.
Debaryomyces hominis synonym of *D. neoformans*, 395.
— *neoformans* on man, effect of temperature on, 676; note on, 456; occurrence in the Argentine, 800; in Belgium and England, 456; in Europe, 29; in Germany, 456; in U.S.A., 396, 592, 676; study on, 592.
— — on mice and rabbits, 676.
— —, synonymy of, 395.
— — vars. *nasalis* and *sheppei* distinct from *D. neoformans*, 395.
Delphax striatella transmitting oat mosaic, 297.
Delphinium ajacis, radish mosaic can infect, 427.
Dendrocalamus, *Bacterium vasculorum* can infect, 374.
Dendrophoma obscurans on strawberry in U.S.A., 402.
Deodar (*Cedrus libani* var. *deodara*), resistance of, to fungal decay, 76.
Dermatophytes, new culture medium for, 178.
Derris elliptica, *Diplodia* and *Fusarium* on, in Uganda, 576.
Deschampsia caespitosa, *Mastigosporium album* on, in Europe, 34.
Desmodium ovalifolium, *Corticium salmonicolor* on, in Malaya, 342.
Deuterophoma tracheiphila on citron in Crete, 672.
— — on lemon in Italy, 245.
Deutzia pulchra var. *formosana*, *Uredo deutziicola* on, in Eastern Asia, 204.
Dewberry (*Rubus*), *Corticium galactinum* on, in U.S.A., 321.
Dianthus, tolerance of, to aluminium sulphate and sulphuric acid, 182.
— *caryophyllus*, see Carnation.
Diaporthe on apple in England, 744.
—, revision of Spegazzini's collection of, 414.
— (?) *citri* on avocado pear in Trinidad, 193.
— (?) — on cacao in Trinidad, 194.
— — on citron in Crete, 672.
— — on citrus in the Argentine, 238; in U.S.S.R., 671.
— — on grapefruit in the Argentine, 238; in Puerto Rico, 308; in Trinidad, 193.
— — on lemon in Cyprus, 91.
— — on mango in Trinidad, 193.
— (?) — on papaw in Trinidad, 194.
— *pungens* on currants in France, 325.
— *umbrina* on rose in U.S.A., 41.
— *vaccinii* can infect *Vaccinium corymbosum*, 403.
— — on cranberry in U.S.A., 403.
Diatraea saccharalis in relation to *Colletotrichum falcatum* on sugar-cane, 344.
Diatrype ribis on currants in France, 325.
Diatrypella agaves on *Agave americana* in S. Africa, 819.
Dicoccum asperum in soil in Scotland, 137.
Dictyosperma album, *Bacterium vasculorum* on, in Mauritius, 374.
Dictyosporium opacum on oats in England, 295.
Dictyuchus (?) *monosporus* on fish in U.S.A., 799.
Didymella lycopersici on eggplant in Bulgaria, 712.
— — on *Solanum racemiflorum*, *S. racemigerum*, and *S. pruniforme*, resistance to, 508.
— — on tomato, control, 508; occurrence in Bulgaria, 413; in Germany, 508, 636; in Madeira, 711; study on, 636; specific and varietal reaction to, 637.
(?) *Didymellina macrospora* on *Iris* in England, 31; in Germany, 599.
Digitalis purpurea, *Sclerotium delphinii* can infect, 183.
Dill (*Peucedanum graveolens*), celery mosaic can infect, 369.
—, *Erysiphe umbelliferarum* f. *anethi* on, in U.S.S.R., 616.

Dilophospora alopecuri not related to *Mastigosporium album* or *M. calvum*, 34.
——— on oats, rye, and wheat in Germany, 586.
Dimerium wattii parasitizing *Asterina camelliae* in India, 822.
Dimerosporium mangiferum on mango in India, 501.
Dinitro-o-cyclohexylphenol, toxicity of, to *Penicillium digitatum* and *P. italicum* on citrus, 247; to *Phytophthora citrophthora* on lemon, 247.
Dinitrophenol, constituent of fluoran O.G., 830; of osmolite timber preservatives, 775.
Dioscorea, see Yams.
Diospyros discolor, *Ganoderma applanatum*, *Irpex*, and *Schizophyllum commune* on, in the Philippines, 490.
— *kaki*, see Persimmon.
Diphenyl-impregnated wrappers, use of, against fungus decay of orange, 101.
Diplocarpon earliana on strawberry in Canada, 191; in U.S.A., 402, 692; varietal reaction to, 692.
— *rosae* on rose, control of, in U.S.A., 41, 440, 598.
Diplodia on chestnut in U.S.A., 148.
— on citron in Crete, 672.
— on date palm in U.S.A., 451.
— on *Derris elliptica* in Uganda, 576.
— on *Durio zibethinus* in Malaya, 504.
— on fruit in Germany, 507.
— on groundnut in Vurma, 156.
— on rose in U.S.A., 440.
— on timber in Malaya, 425.
— *cacaoicola* and *D. frumenti*, synonymy of, 788.
— *gossypina* on cotton in the Belgian Congo, 248; in U.S.A., 25, 520.
— *macrospora* on maize in U.S.A., 17.
— *natalensis* on grapefruit in Dutch E. Indies, 795; in Trinidad, 193.
— — on lemon in Dutch E. Indies, 795.
— — on mangosteen in Burma, 156.
— — on orange in Dutch E. Indies, 795; in Palestine, 102.
— —, synonymy of, 788.
— *palmicola*, *D. pandani*, and *D. paradisiaca* on exotic plants, 507.
— *pinea* on pine, comparable with *Sphaeropsis ellisii*, 57; occurrence in Australia, 656; in Austria, 57; in U.S.A., 643.
— — on *Pseudotsuga taxifolia* and spruce in U.S.A., 643.
— *pseudodiplodia* on apple, pear, and plum in Germany, 507. (See also *Physalospora obtusa*.)
— *tubericola*, synonymy of, 788.
— *zeae*, autotoxin of, 243.
— —, effect of ultra-short radio waves on, 46.
— — on maize, control, 93; nature of resistance to, 244; notes on, 17, 670; occurrence in S. Africa, 460; in U.S.A., 17, 93, 307, 669, 670; relationship of, to *Hendersonina sacchari*, 307; scolecospore formation in, 307; seed tests for, 93; testing of resistance to, 244; toxicity of, to livestock, 460.
Diplodina citrullina on melon in Bulgaria, 413.
Dipsacus fullonum, *Sclerotinia sclerotiorum* on, in U.S.S.R., 477.
Discosporiella phaeosora conidial stage of *Pezicula rubi*, 761.
Discula pinicola on timber in U.S.A., 285.
— *platani* on *Platanus occidentalis* and *P. orientalis* in Italy, 213.
Dog, *Achorion quinckeanum*, *Microsporon lanosum*, and *Trichophyton vinosum* on the, in Czechoslovakia, 455.
Dolichos biflorus, *Macrophomina phaseoli* on, in India, 89; antagonism of *Trichoderma lignorum* to, 89.
- *lablab*, *Bacterium phaseoli* on, in the Sudan, 392.
——— mosaic in China, 608.
———, *Myrothecium roridum* on, in Sierra Leone, 157.
Dothichloe limitata on grasses in U.S.A., formerly referred to *D. atramentosa*, 683.
Dothiorella on banana and orange in Palestine, 263.
- *ulmi* on elm in U.S.A., 281, 557.
Dowicide, use of, to disinfect wood pulp, 774.
— G, H, and P, composition of, and use of, as timber preservatives, 363–4.
Durio zibethinus, *Colletotrichum*, *Diplodia*, and *Phyllosticta* on, in Malaya, 504.
———, *Pythium complectens* on, in Malaya, 264.
Dusting apparatus, 605.
Dyes, aniline, use of, against potato virus diseases, 377.
-, —, see also Malachite green.

Eggplant (*Solanum melongena*), *Bacterium solanacearum* on, in the Philippines, 370, 444.
-, *Cercospora melongenae* and *Corticium solani* on, in the Philippines, 370.
-, damping-off of, in U.S.A., 440.
-, *Didymella lycopersici* on, in Bulgaria, 712.
-, *Gloeosporium melongenae* on, in the Philippines, 370.
———, low temperature injury to, in storage, in U.S.A., 723.
-, *Oidiopsis* on, in Burma, 156.
-, — *taurica* on, in French Morocco, 83; in Madagascar, 11.
-, *Phomopsis vexans* on, in Canada, 725; in Philippines, 370, 444; varietal reaction to, 444.
———, *Phytophthora melongenae* on, in the Philippines, 370.
—, — *parasitica* on, 742; in the Philippines, 444.
—, — — var. *nicotianae* can infect, 419.
—, potato yellow dwarf can infect, 270.
—, *Pseudoperonospora cubensis* can infect, 86.
—, *Puccinia tubulosa* on, in the Philippines, 370.

[Eggplant], *Pythium aphanidermatum* can infect, 781.
—, — *ultimum* can infect, 497.
—, *Sclerotium rolfsii* on, in the Philippines, 370; in U.S.A., 79.
—, *Sphaerotheca humuli* var. *fuliginea* on, in Japan, 84.
—, tobacco brown root rot can affect, 716.
—, (?) virus disease of, in India, 90; transmission of, to *Datura fastuosa*, 90.
— 'woodiness' in U.S.S.R., 699.
Eggs, moulds in, in Queensland, 503.
—, *Penicillium* on, in Northern Ireland, 180.
—, *Sporotrichum carnis* on, in Northern Ireland, 180.
Eidamia viridescens synonym of *Trichoderma viride*, 761.
Elaeis guineensis, see Oil palm.
Elettaria cardamomum, see Cardamom.
Eleusine coracana, *Helminthosporium nodulosum* on, in Italian E. Africa, 185.
— —, *Ustilago eleusinis* on, in India, 628.
Elfvingia a subdivision of *Ganoderma*, 712.
Elm (*Ulmus*), *Ceratostomella ulmi* on, breeding against, 213, 558; control, 70, 71, 282, 557, 558, 641, 717; note on, 826; occurrence in England, 640, 771; in France, 826; in Holland, 71, 557, 558, 641; in Italy, 213; ? in Scotland, 640; in U.S.A., 70, 281, 282, 717, 771; in U.S.S.R., 489; *Saperda tridentata* in relation to, 771; *Scolytus* in relation to, 557, 772, 826; specific reaction to, 489, 557, 558, 640, 641; transmission of, by (?) *Hylesinus kraatzi* and *H. vittatus*, 641; by insects, 70.
—, *Coniothyrium* on, in U.S.A., 281.
—, *Dothiorella ulmi* on, in U.S.A., 281, 557.
—, *Gnomonia ulmea* on, control, 147; occurrence in Canada, 146; in U.S.A., 11, 354, 375; study on, 146; specific reaction to, 146, 375.
—, phloem necrosis of, in U.S.A., 147.
—, *Phytophthora cambivora* can infect, 826.
—, *Polyporus litschaueri* on, in U.S.S.R., 356.
—, *Sphaeropsis* on, in U.S.A., 281, 354.
—, *Ustulina vulgaris* can infect, 70.
—, *Vermicularia* on, in U.S.A., 281.
—, *Verticillium* on, in U.S.A., 281.
—, — *albo-atrum* on, in Denmark, 88; in U.S.A., 67.
— wilt in U.S.A., 354.
Elsinoe, host range of, 59.
— *ampelina* on grapes in Queensland, 502.
— *fawcetti* on citrus in Dutch E. Indies, 794; in Sierra Leone, 156; in U.S.S.R., 671.
— — on grapefruit, lemon, and orange in Puerto Rico, 308.
— *phaseoli* on *Phaseolus lunatus* in the Dominican Republic, 58.
— *veneta* on loganberry in England, 325.
— — on raspberry in the Argentine, 478; in England, 325.
Elymus canadensis, *Ustilago hordei* and *U. nigra* can infect, 665–6.
[*Elymus*] *glaucus jepsoni*, *Ustilago hordei* on, in U.S.A., 665.
— *sibiricus*, *Ustilago hordei* can infect, 666.
Emilia sonchifolia, *Sphaerotheca humuli* var. *fuliginea* on, in Japan, 84.
— —, tomato ring spot on, in Hawaii, 657.
Empoasca fabae in relation to orange yellow spot, 673.
Empusa fresenii on aphids in Sierra Leone, 157.
— *grylli* on grasshopper in England, 736; in Hungary, 140.
— *muscae* on flies in Hungary, 140; in U.S.A., 453.
Endodermophyton on man, Gram reaction of, 523.
Endomyces albicans on man in Italy, 253.
— *capsulatum* and its var. *isabellinus* on man in N. America, 29.
— *dermatitidis* on man, assimilation of glucose by, 179; occurrence in the Argentine, 800; in N. America, 29; in U.S.A., 253; variation in, 677.
Endothia parasitica on chestnut in U.S.A., 354, 827.
Entoloma rhodopolium on pine forming mycorrhiza in Sweden, 542.
Entomophthora aphidis on *Amphorophora onobrychis* in Hungary, 140.
— *sphaerosperma* on *Papilio podalirius* in Hungary, 140.
Entyloma dahliae on dahlia in the Argentine, 478; in New Zealand, 726.
Eocene, use of, as a spreader, 285.
Epicoccum on *Scorzonera tau-saghyz* in U.S.S.R., 137.
Epidermophyton, new culture medium for, 178.
— on man, Gram reaction of, 523; occurrence in the Argentine, 178.
— *floccosum* on man, elimination of bacteria from cultures of, 110; occurrence in the British Navy, 677; in China, 110, 523; in Europe, 678.
— *gypseum flavum* on man in Hungary, 311.
— *interdigitale* and *E.* Kaufmann-Wolf synonyms of *Trichophyton interdigitale*, 313.
— *luteum* on man in Hungary, 311.
— *sulfureum* on man in Hungary, 312.
Epitrix parvula transmitting *Bacterium tabacum* on tobacco, 442.
Eremothecium ashbyi on cotton, 308.
— *cymbalariae*, host range of, 309.
Ergot, see *Claviceps purpurea*.
Erianthus giganteus, *Colletotrichum falcatum* on, in U.S.A., 344.
Erica, *Phytophthora cambivora* on, in U.S.A., 33.
Eriobotrya japonica, see Loquat.
Eriodendron anfractuosum, *Phytophthora parasitica* var. *nicotianae* can infect, 419.
Erwinia amylovora, identification of, by bacteriophage, 786.
— — on apple, factors affecting susceptibility to, 685; nature of resistance to, 36; occurrence in Canada, 725; in

U.S.A., 399; study on virulence of, 399.
[*Erwinia amylovora*] on loquat in Bermuda, 506.
— — on pear, breeding against, 442; factors affecting, 685; occurrence in U.S.A., 399, 442; studies on, 399, 684; varietal reaction to, 442; virulence of, 399.
— — on *Pyracantha angustifolia*, 684.
— *aroideae*, bacteriophage of, 162.
— — on tobacco in Java, 481, 555.
— *carotovora* on carrot in Italy, 395.
— — on *Iris* in England, 31.
— *phytophthora* on potato in Norway, 412.
Eryngium planum, cucumber virus 1 affecting, in Germany, 509, 803.
Erysiphe, Cicinnobolus cesatii on, in U.S.A., 803.
—, host range of, 58.
— *cichoracearum* on cantaloupe in U.S.A., 151.
(?) — — on cineraria in Scotland, 459.
— — on cucumber in Germany, 651; in U.S.A., 465.
— — on melon in U.S.A., 85.
— — on tobacco in Java, 555; in Southern Rhodesia, 632.
— *communis* on colza in Germany, 494.
— *graminis* on barley, genetics of resistance to, 515; occurrence in U.S.A., 388, 465, 515; varietal reaction to, 388, 515.
— — on cereals in U.S.S.R., 39.
— — on wheat, breeding against, 385; effect of, on metabolism of host, 14, 171; factors affecting, 228, 471; genetics of resistance to, 471; occurrence in Germany, 385; in Italy, 166, 228, 471; in U.S.A., 15; physiologic specialization in, 385; studies on, 15, 171, 228, 385; *Tilletia caries* antagonistic to, 166; varietal reaction to, 385.
— *polygoni* on bean in U.S.A., 465.
— — on clover in U.S.A., 319.
— — on horse-radish in Germany, 365.
— — on lupin in Spain, 599.
(?) — — on tomato in the Argentine, 555.
— *umbelliferarum* on parsley in Germany, 83.
— — f. *anethi* on *Anethum graveolens* and *Foeniculum vulgare* in U.S.S.R., 616.
Erysit, use of, against *Sphaerotheca pannosa* on rose, 528.
Erythrina lithosperma, Ustulina zonata on, in Ceylon, 713.
Ethyl mercury chloride, a constituent of lignasan, 363.
— — —, use of, against damping-off of beet, 6; as a seed disinfectant, 93.
— — iodide, use of, against wheat bunt, 301.
— — phosphate, effect of, on mitosis of Gramineae, *Holcus sorghum*, and oats, 164.
— — tartrate, use of, against *Pythium de Baryanum* on beans, 291.
Ethylene, use of, against apple storage disorders, 116; against orange storage spot, 657.
— chlorhydrin, use of, in connexion with potato tuber disinfection, 136.
Eucalyptus globulus, Cercospora epicoccoides on, in the Argentine, 478.
— *marginata, Fistulina hepatica* on, in Western Australia, 72.
— *microcorys*, resistance of, to fungal decay, 76.
— *regnans, Gonytrichum caesium* on, associated with 'heart', in Australia, 656.
— *rostrata, Cercospora epicoccoides* on, in the Argentine, 478.
Euchlaena mexicana, Puccinia maydis on, in U.S.A., 374.
'Euclorina', use of, against chestnut spoilage, 355.
Euganoderma, a subdivision of *Ganoderma*, 712.
Eugenia caryophyllata, see Clove.
Eugeotrichum, a subgenus of *Geotrichum*, 28.
Euonymus japonicus, Oidium euonymi-japonici on, in U.S.A., 465.
Euphorbia preslii, Sclerotium rolfsii on, in U.S.A., 80.
Euryancale sacciospora in decayed matter in U.S.A., 798.
Eusol solution, composition of, and use of, against *Gloeodes pomigena* on citrus, 796.
Eustemphylium, a subgenus of *Stemphylium*, 141.
Eutettix tenellus, inhibition of tobacco mosaic virus by juice of, 540.
— — transmitting beet curly top, 77, 78, 225, 485.
Eutorula excorians on man, in Australia, 176.
Eutypa lata var. *ribis*, perfect stage of *Phomopsis ribis*, 324.
Eutypella parasitica on *Acer rubrum* and *A. saccharum* in U.S.A., 147.
Exobasidium camelliae on *Camellia japonica*, pathological anatomy of, 528.

Fabraea maculata on apple in the Argentine, 532; in U.S.A., 259.
— — on medlar in England, 261.
— — on pear in the Argentine, 478, 532; in U.S.A., 38, 259.
— — on quince in the Argentine, 532; in U.S.A., 38.
Fagus, see Beech.
Favolus canadensis on *Salix* in Alaska, 643.
Favotrichophyton album var. *singulare, Trichophyton singulare* (q.v.) renamed, 312.
— *decipiens* on man in Batavia, 27.
Ferns, *Taphrina* on, 820; in N. America, 141.
—, *Uredinopsis* on, in U.S.A., 551.
Ferric ammonium citrate, ferric ammonium oxalite, ferric potassium oxalate, and ferric potassium tartrate, use of, against chlorosis of peach, 35; of pear, 36.

Ferrous sulphate, effect of, on *Phymatotrichum omnivorum*, 176.
— —, use of, against reclamation disease, 163; against sugar-cane chlorosis, 376.
— —, see also Iron sulphate.
Fertilizers, effect of, on *Actinomyces scabies* on potato, 475; on *Bacterium pruni* on peach, 376, 788; on black heart of beet, 76; on brown heart of swedes, 153, 365, 565; on *Cercospora musae* on bananas, 328; on *Cercosporella herpotrichoides* on cereals, 448; on chlorosis of vine, 499; on *Corticium* on wheat, 97; on *C. solani* on potato, 612; on *Curvularia* on wheat, 97; on damping-off of beet, 567; on dry and heart rot of beet, 430; on 'Eisenfleckigkeit' of potato, 476; on *Erwinia carotovora* on *Iris*, 31; on foot rot of cereals, 386; on *Fusarium* on wheat, 97; on *F. conglutinans* var. *callistephi*, 113; on *F. vasinfectum* on cotton, 24, 106, 787; on *Helminthosporium* on wheat, 97; on *H. sigmoideum* var. *irregulare* on rice, 815; on internal breakdown of apples, 235; on leaf scorch of apple, 188; of currant, 39; on *Leptosphaeria salvinii* on rice, 815; on mushrooms, 229; on *Ophiobolus graminis* on wheat, 241; on physiological disease of barley and oats, 99; on *Phytophthora erythroseptica* on potato, 135; on pine needle fusion, 491; on *Pseudomonas cerasi* on stone fruits, 690; on *P. fluorescens* on tobacco, 765; on *Pseudopeziza ribis* on black currant, 746; on *Puccinia glumarum* on wheat, 513; on *P. triticina* on wheat, 584; on 'puffy bark' and root rot of *Aleurites fordii*, 642; on reclamation disease in Australia, 163; on 'rust' of cotton, 24; on *Synchytrium endobioticum* on potato, 199, 506; on tomato streak, 485; on *Venturia inaequalis* on apple, 236, 507; on water-core of apple, 687.
Festuca duriuscula, germination of, stimulated by *Mucor*, 47.
— —, *Pythium* spp. on, antagonism of micro-organisms to, 47.
— *elatior*, *Helminthosporium inconspicuum* on, in Holland, 154.
— *rubra*, *Sclerotinia borealis* on, in Sweden, 298.
Fig (*Ficus carica*), *Sclerotinia sclerotiorum* on, in Greece, 10.
Filberts, see *Corylus*.
Fir, see *Abies*.
Fish, *Achlya flagellata* on, *A. prolifera* identical with, 454; occurrence in U.S.A., 454, 799.
—, *Dictyuchus* (?) *monosporus* on, 799.
—, *Saprolegnia* on, in India, 675.
—, — *parasitica* on, in Italy, 591; in U.S.A., 799.
Fistulina hepatica on *Eucalyptus marginata* in Western Australia, 72.
Flax (*Linum usitatissimum*), *Alternaria radicina* on, in Denmark, 573; renamed *Stemphylium radicinum*, 573.
—, — *tenuis* on, in Germany, 315.
[Flax], *Ascochyta linicola* on, in U.S.S.R., 256.
—, *Asterocystis radicis* on, in Holland, 268.
—, *Botrytis cinerea* on, in Germany, 315.
— chlorosis in Switzerland, 29.
—, *Colletotrichum atramentarium* on, in Germany, 315.
—, — *lini*, antagonism of soil micro-organisms to, 111; occurrence in Germany, 315; in U.S.S.R., 256; serological study on, 127; varietal reaction to, 127.
— diseases, seed treatment against, 93.
—, 'fungus sterilis' on, in U.S.S.R., 256.
—, *Fusarium* on, in U.S.S.R., 256.
—, — *avenaceum* on, in Germany, 315; in U.S.S.R., 316.
—, — *culmorum* on, in Germany, 315.
—, — *lini* on, in the Argentine and Uruguay, 315; serological study on, 127; varietal reaction to, 127.
—, — *redolens* on, in Germany, 316.
—, — *scirpi* and its var. *acuminatum*, and *F. solani* on, in Uruguay, 316.
—, *Gibberella saubinetii* on, in the Argentine, 316.
—, *Melampsora lini* on, breeding against, 268; occurrence in Germany, 509, 679; in Holland, 268, 679; in Sweden, 679; physiologic races of, 509, 679; serological study on, 127; varietal reaction to, 127, 268, 509, 679.
—, *Phoma exigua* on, in Germany, 316.
—, — *herbarum* on, in Holland, 154.
—, — *lingam* can infect, 316.
—, — *lini* on, in Germany, 315.
—, *Polyspora lini* on, antagonism of soil micro-organisms to, 111; control, 111; occurrence in Canada, 111; in Denmark, 88; in U.S.S.R., 256; serological study on, 127; varietal reaction to, 127.
—, potash deficiency in, in Germany, 54.
—, *Pythium megalacanthum* on, in Holland, 268.
—, *Sphaerella linorum* on, factors affecting, 315; occurrence in the Argentine, 112, 315, 595; in Rumania, 315; in U.S.A., 739; *Septoria linicola* imperfect stage of, 112; varietal reaction to, 739.
—, see also Linseed.
Flies, *Empusa muscae* on, in Hungary, 140; in U.S.A., 453.
Fluoran O.G., composition of, and use of, as a timber preservative, 830.
Fluorine injury to olives in Italy, 466.
— timber preservatives, German legislation in relation to, 563.
Foeniculum vulgare, *Erysiphe umbelliferarum* f. *anethi* on, in U.S.S.R., 616.
— —, *Pythium* on, in Italy, 203.
Folosan, use of, against *Pleospora herbarum* on lettuce, 496.
Fomes annosus, effect of growth substances on, 335.
— — on *Abies* in Switzerland, 357; resistance to, in Denmark, 773.
— — on conifers in Great Britain, 361.
— — on forest trees in N. America, 827.

[*Fomes annosus*] on larch in Denmark, 772; in Holland, 74.
— — on pine in Denmark, 773.
— — on *Pseudotsuga taxifolia* in Denmark, 772.
— — on spruce in Denmark, 772.
— — on timber, factors affecting, 360; in Finland, 564.
— —, production of oxalic acid by, 426.
— —, spore discharge in, 215.
— *connatus* on *Acer rubrum* and forest trees in U.S.A., 280.
— *demidoffii* on conifers in Great Britain, 361.
— *everhartii* in U.S.A., 487.
— *fomentarius*, comparison of, with *F. igniarius*, 214.
— —, effect of growth substances on, 335.
— — incorrectly cited as *F. fomentarius* (L.) Gill., 821.
— — on *Acer pseudoplatanus* and alder in Denmark, 215.
— — on birch in Scotland, 214.
— — on forest trees in U.S.A., 280.
— — on timber, factors affecting, 360; zonate discoloration in, in U.S.A., 69.
— —, reaction of, to iodine, 643.
— —, spore discharge in, 215.
— —, synonymy of, 821.
— — var. *nigrescens* synonym of *F. fomentarius*, 215.
— *fraxinophilus* on forest trees in U.S.A., 280.
— — on timber in U.S.A., 69.
— *geotropus* on *Taxodium distichum* in U.S.A., 772.
— *igniarius*, comparison of, with *F. fomentarius*, 214.
— — on birch in Alaska, 643.
— — on forest trees in U.S.A., 280.
— — on *Salix* in Alaska, 642.
— — on timber in U.S.A., 69; varietal reaction to, 286; zonate discoloration in, 69.
— —, production of oxalic acid by, 426.
— *lignosus* on *Centrosema pubescens* in Dutch E. Indies, 136; in Malaya, 341.
— — on citrus in Dutch E. Indies, 794.
— — on coffee in the Belgian Congo, 21; in the Dutch E. Indies, 136, 137.
— — on *Crotalaria anagyroides* in Dutch E. Indies, 136.
— — on *Hevea* rubber, control, 136, 579, 728; effect of soil covers on, 341; factors affecting, 137; occurrence in Ceylon, 655; in Dutch E. Indies, 136, 137; in Java, 579, 728; in Malaya, 341; in Sumatra, 579, 728.
— — on *Leucaena glauca* in Dutch E. Indies, 136, 137.
— — on *Tephrosia vogelii* in Dutch E. Indies, 136.
— *marginatus* on poplar, 144.
— *nigricans* synonym of *F. fomentarius*, 215.
— *noxius* on *Artocarpus blumei* in Dutch E. Indies, 137.
— — on avocado pear in Malaya, 504.
— — on *Cinchona* in Sumatra, 578.
[*Fomes noxius*] on citrus in Dutch E. Indies, 794.
— — on coffee in Sumatra, 579, 728.
— — on *Hevea* rubber, control, 728; factors affecting, 137; occurrence in Ceylon, 655; in Dutch E. Indies, 137; in Sumatra, 728.
— — on *Leucaena glauca* in Sumatra, 729.
— — on tea in Malaya, 504; in Sumatra, 579, 729.
— *officinalis* on conifers in Great Britain, 361.
— *pini* on conifers in Great Britain, 361.
— — on larch in Norway, 559.
— — on pine in Norway, 559; in U.S.A., 284.
— — on *Pseudotsuga taxifolia* in U.S.A., 644.
— — on spruce in Norway, 559; in Alaska, 643.
— — synonym of *Trametes pini*, 73.
— *pinicola* can infect poplar, 2; development of decay in trees inoculated with, 2.
— —, effect of growth substances on, 335.
— —, interfertility in, 144.
— — on conifers in Great Britain, 361.
— — on pine in Norway, 559.
— — on spruce in Norway, 559.
— — on timber, biochemistry of, 4.
— — on trees in Scotland, 76.
— *rimosus* on timber, varietal reaction to, 285.
— *roseus* on timber in Great Britain, 361.
— *subroseus* on *Juniperus bermudiana* in Bermuda, 505.
— *tricolor* on *Shorea robusta* in India, 642.
— *ulmarius*, biochemistry of, 4.
Food investigation, index to literature on, 196.
—, moulds on, in New Zealand, 461; in U.S.S.R., 467; in Victoria, 460.
Forest pathology research in U.S.A., 145.
— tree diseases in N. America, 827.
Formacide, use of, against *Corticium solani* on potato, 578.
Formaldehyde, effect of, on seed germination, 182.
— dust, use of, against damping-off, 332.
— injury, 14.
, use of, against *Actinomyces scabies* on potato, 135; against *Alternaria cheiranthi* on wallflower, 596; against *A. solani* on tomato, 66; against *Aplanobacter michiganense* on tomato, 234; against *Ascochyta cheiranthi* on wallflower, 596; against *Botrytis cinerea* on grapes, 805; against *B. tulipae* on tulip, 30; against bulb rots, 654; against *Cladosporium fulvum* on tomato, 769; against *Corticium* on *Volvaria*, 156; against *C. solani* on potato, 135; on *Zinnia*, 501; against damping-off, 182, 333; of pine, 786; against *Didymella lycopersici* on tomato, 508; against *Fusarium coeruleum* on potato, 409; against moulds of paper, 697; against *Penicillium* and *Sporotrichum* in eggs, 181; against *Phoma* on beet,

442; against *P. betae* on beet, 77; against *Phytophthora cryptogea* and *P. erythroseptica* on tulip, 183; against *Plasmodiophora brassicae* on cabbage, 508; against *Pseudomonas campestris* on *Matthiola incana* var. *annua*, 398; against *Schizophyllum commune* on *Diospyros discolor*, 490; against *Septoria apii-graveolentis* on celeriac, 367; on celery, 291; against sett rot of sugar-cane, 620; against *Synchytrium endobioticum* on potato, 199; against *Tilletia caries* on wheat, 166; against tobacco mosaic, 554; against tomato streak, 484; against *Urocystis cepulae* on onion, 83, 367; against *U. occulta* on rye, 166; against wheat bunt, 12, 14, 301; as a seed disinfectant, 514; with steam for soil sterilization, 194.

Forsythia intermedia, *Pseudomonas fraxini* and *P. savastanoi* can infect, 825.

— *suspensa*, *Pseudomonas fraxini* can infect, 825.

— *viridissima*, *Pseudomonas fraxini* and *P. savastanoi* can infect, 825.

Fowl, *Aspergillus fumigatus* on the, in U.S.A., 679.

—, *Candida albicans* on the, in U.S.A., 738.

Fragaria vesca, see Strawberry.

Fraxinus, see Ash.

Freesia, *Fusarium bulbigenum* on, in Bermuda, 506.

Frog, *Saprolegnia parasitica* on the, in Italy, 591.

—, Saprolegniaceae on the, in U.S.A., 799.

Fruit diseases in the U.S.A. markets, 35.

— trees, book on diseases of, 398.

— —, little leaf of, in the Argentine, Australia, New Zealand, and S. Africa, 187; in U.S.A., 261.

Fumago vagans on sugar-cane in Japan, 56; *Ceratovacuna lanigera* in relation to, 56.

Fumagospora in Australia, 627.

Fungal interaction, literature on, 609.

Fungi, association effects of, 128.

—, book on spore discharge in, 405.

— causing plant diseases in Britain, agreement to use standard names for, 754.

—, Corda's list of, 347.

—, decomposition of manure by thermophilic, 476.

—, ecology of the larger, 405.

—, effect of inoculum on growth of, 757.

—, growth of, in synthetic nutrient solutions, 813.

—, heavy metal nutrition of, 609.

— Imperfecti, guide to the study of, 711.

—, list of, in Africa, 820; in the Argentine, 478; in Australia, 57; in Belgium, 820; in Bermuda, 550; in Bulgaria, 712; in Cyprus, 550; in Czechoslovakia, 414; in the Dominican Republic, 58; in Florida, 820; in French Morocco, 550; in Germany, 140; in Greece, 762; in the Himalayas, 204; in Hungary, 139; in India, 57; in Japan, 204; in Manitoba, 414; in New Zealand, 726; in Palestine, 275; in Poland, 413; in Portugal, 711; in Saskatchewan, 414; in Sierra Leone, 56; in Uganda, 56; in U.S.S.R., 145, 763.

[Fungi], nomina generica conservanda, British proposals regarding, 755.

Fungicidal sprays, evaluation of, 532.

Fungicides, certification of, in New Zealand, 235.

—, list of international, suggested, 506.

—, official list of, in Denmark, 332.

—, principles underlying laboratory tests of, 753.

—, registration of, in Victoria, 808.

—, technique for testing, 538.

'Fungus sterilis' on flax in U.S.S.R., 256.

Furcraea, *Colletotrichum agaves*, *Coniothyrium* (?) *concentricum*, and *Corticium salmonicolor* on, in Colombia, 12.

Fusarium associated with damping-off of cotton in U.S.A., 25.

—, effect of light on conidia of, 609.

—, list of species of, in India, 710.

— on apple in England, 744; in Italy, 572.

— on banana, control, 327; occurrence in Japan, 41; in New S. Wales, 327; in S. Africa, 438.

— on barley in England, 446.

— on beet in England, 646; in U.S.A., 76.

— on cereals in U.S.A., seed tests for, 93.

— on *Cicer arietinum* in India, 500, 501, 780.

— on *Cinchona* in Sumatra, 578.

— on citrus in Dutch E. Indies, 794.

— on clover in U.S.S.R., 115.

— on cotton, control, 787; occurrence in India, 501; in Uganda, 574; in U.S.A., 25, 520, 787.

— on *Crotalaria juncea* in India, 501; in Uganda, 575.

— on *Crotalaria saltiana* (*C. striata*) in Uganda, 575.

— on *Derris elliptica* in Uganda, 576.

— on flax in U.S.S.R., 256.

— on *Hevea* rubber in Sumatra, 579.

— on maize in S. Africa, 438; in U.S.A., 93.

— on oil palm in Malaya, 503.

— on onion in Victoria, 7.

— on orange in Java and Malaya, 504; *Nectria* stage of, 504.

— on paper in Italy, 697.

— on passion fruit in New Zealand, 331.

— on peas in U.S.A., 495.

— on pigeon pea in India, 501.

— on pineapple in Queensland, 503.

— on potato in Norway, 412.

— on rice in U.S.A., 546.

— on *Scorzonera tau-saghyz* in U.S.S.R., 137.

— on sorghum in U.S.A., 99.

— on soy-bean in Germany, 832.

— on strawberry in Canada, 191; in England, 809.

— on sugar-cane in Egypt, 625.

— on wheat in Canada, 515; in England, 446.

— *anguioides* on citrus in U.S.S.R., 671.

[*Fusarium*] (?) *angustum* on groundnut in S. Africa, 438.
— *avenaceum* on *Allium schoenoprasum* in Switzerland, 227.
— — on broad bean in Germany and Holland, 831.
— — on flax in Germany, 315; in U.S.S.R., 316.
— — on lupin, 832.
— — on peas in Germany, 831; in Holland, 154.
— — on sorghum in Italy, 517.
— — on tulip in England, 30.
— — on vetch in Germany, 831.
— —, physiology of, 97.
— —, toxicity of hydrogen sulphide to, 644.
— *buharicum* on cotton, physiology of, 250.
— *bulbigenum* on freesia in Bermuda, 506.
— — on *Narcissus* in Bulgaria, 413; in England, 653.
— (?) — var. *batatas* on sweet potato in Japan, 496.
— — var. *lycopersici* on *Lycopersicum hirsutum* and *L. peruvianum*, resistance to, 824–5.
— — — — on tomato, control, 439; genetics of resistance to, 766; occurrence in New S. Wales, 726; in U.S.A., 237, 422, 439, 766, 788; varietal reaction to, 237, 422, 439, 557, 726, 766, 788.
— — — —, toxicity of extracts and filtrates of, to cabbage and tomato, 49.
— — var. *niveum* on watermelon in U.S.A., 85, 368.
— *coeruleum* on potato in Scotland, 409.
— (?) *coffeicola* on coffee in the Belgian Congo, 21.
— *conglutinans* var. *callistephi*, effect of growth substances on, 336.
— — — — on China aster in Italy, 113; in New S. Wales, 234.
— *culmorum*, antagonism of, to *Ophiobolus graminis*, 664.
— — on asparagus in Germany, 431.
— — on carnation in Bermuda, 505.
— — on cereals, note on, 809; review of work on, in Canada, 660.
— — on flax in Germany, 315.
— — on food in U.S.S.R., 468.
— — on leeks in England, 779.
— — on oats in France, 372.
— — on pansy in Holland, 112.
— — on peas in Holland, 154.
— — on wheat, control, 94, 97; occurrence in Canada, 733; in New Zealand, 94; in Victoria, 97; soil micro-organisms in relation to, 733.
— *expansum* on grapefruit in Trinidad, 193.
— *juruanum*, see *Calonectria diploa*.
— (?) *lateritium* on date palm in U.S.A., 20.
— *lini* on flax in the Argentine and Uruguay, 315; serological reaction in relation to resistance to, 127.
— *orthoceras* on broad bean in Germany, 831.
[*Fusarium orthoceras*] on *Pseudotsuga taxifolia* in Holland, 358.
— — on strawberry in U.S.A., 40.
— — on vetch in Germany, 832.
— — var. *pisi* on peas in U.S.A., 81, 777.
— *oxysporum* on *Abies grandis* in Holland, 358.
— — on broad bean in Germany, 831.
— — on *Cereus peruvianus monstruosus* in Italy, 599.
— — on lupin in Germany, 116, 832.
— — on peas in Germany, 831.
— — on pine in Holland, 358.
— — on potato in Jamaica, 92; in U.S.A., 52.
— — on soy-bean in Germany, 832.
— — on vetch in Germany, 831.
— — f.2 on sweet potato in Japan, 496.
— — f.8 on peas in U.S.A., 777.
— — var. *aurantiacum* on wheat in the Argentine, 315.
— — var. *cubense* on banana in Canary Islands, 506; in Haiti, 327; in St. Lucia, 604.
— — — — — on *Musa textilis* in the Philippines, 30, 256.
— — var. *gladioli* on gladiolus in Canada, 725; in Holland, 154.
— *poae* on citrus in U.S.S.R., 671.
— *redolens* on flax in Germany, 316.
— *sambucinum* imperfect stage of *Gibberella pulicaris*, 760.
— — f.2 on citrus in U.S.S.R., 671.
— *scirpi* on flax in Uruguay, 316.
— — on pine in Holland, 358.
— —, physiology of, 97.
— — var. *acuminatum* on flax in Uruguay, 316.
— — var. *compactum* on cotton in the Sudan, 392.
— (?) *semitectum* on date palm in U.S.A., 20.
— *solani* on flax in Uruguay, 316.
— — on lupin, 832.
— — on peas in Germany, 831.
— — on pine in Holland, 358.
— — on *Pseudotsuga taxifolia* in Holland, 358.
— — on strawberry in U.S.A., 40.
— — var. *eumartii* on potato in U.S.A., 52.
— — var. *martii* on bean in Germany, 811; in U.S.A., 290.
(?) — — — — f.2 on peas in U.S.A., 777.
— *sporotrichioides* on peas in Holland, 154.
— —, physiology of, 97.
— *sublunatum* on citrus in U.S.S.R., 671.
— *vasinfectum* on chilli in India, 89.
— — on cotton, associated with damping-off control, 787, 797; factors affecting, 106, 452; occurrence in the Belgian Congo, (?) 248, 797; in Burma, 156; in India, 89; in Peru, 25; in U.S.A., 24, 25, 106, 452, 787; physiologic races of, 89; varietal reaction to, 24, 106, 452, 787.
— — on cowpea in India, 89.
— — on groundnut in U.S.A., 788.

[*Fusarium vasinfectum*] on pigeon pea in India, 293.
— — var. *lutulatum* on bean in England, 779.
— — var. *zonatum* f.1 on *Allium schoenoprasum* in Switzerland, 227.
Fusicladium saliciperdum on *Salix* in U.S.A., 827.
Fusicoccum viticolum on vine in S. Africa, 231.
Fusoma rubricosa synonym of *Mastigosporium calvum*, 34.

Gaillardia grandiflora, *Bremia lactucae* on, in Switzerland, 139.
Galega officinalis, *Pisum* virus 3 can infect, 648.
Galinsoga parviflora, cucumber virus 1 affecting, in Germany, 509, 803.
Ganoderma, *Amauroderma* excluded from the genus, 712.
— on clove in India, 90.
—, subdivision of the genus, 712.
— *applanatum* on *Abies balsamea* and beech in U.S.A., 2.
— — on *Diospyros discolor* in the Philippines, 490.
— — on forest trees in U.S.A., 280.
— — on timber, biochemistry of, 4; zonate discoloration in, in U.S.A., 69.
— —, spore discharge of, 215.
— *lucidum* on *Acacia karroo* in S. Africa, 438.
— —, reaction of, to iodine, 645.
— *pseudoferreum* on *Albizzia falcata* in Java, 579, 728.
— — on *Albizzia moluccana* in Malaya, 504.
— — on *Gliricidia maculata* in Malaya, 504.
— — on *Hevea* rubber in Java and Sumatra, 579, 728.
— — on tea, control, 504; occurrence in Java, 579, 630, 728; in Malaya, 504; in Sumatra, 579.
— *resinaceum* on oak in Austria, 215.
Garcinia mangostana, see Mangosteen.
Gardenia, *Phomopsis gardeniae* on, in U.S.A., 33.
— *veitchii*, chlorosis of, in U.S.A., 184.
Garlic (*Allium sativum*), *Botrytis globosa* on, in Germany, 140.
—, *Sclerotium cepivorum* on, in New S. Wales, 82.
Geese, toxicity of *Penicillium glaucum* on maize to, 460.
Gentiana asclepiadea, *Cronartium gentianeum* on, genetic connexion between *Peridermium* and, 644; occurrence in Austria, 644; in Europe, 73.
— *lutea*, *Botrytis* on, in U.S.S.R., 477.
Geomyces auratus in mushroom compost beds in England, 295.
Geotrichoides on wood pulp in Sweden, 198.
— synonym of *Trichosporon*, 525.
Geotrichum, subdivision of the genus, 28.
— *matalense* on man in Italy, 28.
Gerbera jamesoni, *Alternaria solani* on, in Italy, 114.
Germisan, use of, against *Alternaria cheiranthi* and *Ascochyta cheiranthi* on wallflower, 596; against citrus albinism, 247.
Gibberella fujikuroi, antagonism of, to *Aspergillus flavus*, 173.
— —, effect of ultra-violet rays on, 46.
— — on broad bean in the Sudan, 392.
— — on cotton, associated with damping-off, 25; control, 105, 787; occurrence in U.S.A., 25, 105, 519, 787.
— — on date palm in U.S.A., 20.
— — on groundnut in U.S.A., 788.
— — on maize in U.S.A., 17, 669.
— — on orange in India, 175.
— — on rice, control, 88; isolation of active principle from, 707; occurrence in India, 88; in Italy, 54; in Japan, 707.
— — on sorghum in Italy, 517.
— — on sugar-cane in Brazil, 624; in Burma, 155; in the Philippines, 626.
— — var. *subglutinans*, *Cephalosporium sacchari* identical with, 500.
— — — — on maize in U.S.A., 669.
— *pulicaris* on hops, *Fusarium sambucinum* imperfect stage of, 760; occurrence in England, 760.
— *saubinetii*, effect of ultra-short radio waves and ultra-violet rays on, 46.
— — on barley in U.S.A., 388.
— — on cereals, in U.S.A., seed tests for, 93; review of work on, Canada, 660.
— — on cotton in Colombia, 12.
— — on flax in the Argentine, 316.
— — on maize, control, 93, 332; factors affecting, 18; occurrence in U.S.A., 18, 93, 332, 669; seed tests for, 93.
— — on wheat, control, 93; occurrence in Canada, 725; in U.S.A., 661; on vernalized seed, 659.
— —, physiology of, 97.
— —, variation in, 511.
Ginger (*Zingiber officinalis*), *Pythium butleri* on, in India, 89.
Gladiolus, *Bacterium marginatum* on, in New S. Wales, 113.
—, *Botrytis* on, in Holland, 154.
—, *Fusarium oxysporum* var. *gladioli* on, in Canada, 725; in Holland, 154.
— mosaic in England, 784.
—, *Sclerotinia gladioli* on, in Bulgaria, 712; in New Zealand, 726.
—, *Urocystis gladioli* on, in Switzerland, 139; in U.S.A., 33.
Gleditschia japonica and *G. triacanthos*, *Thyronectria denigrata* on, in U.S.A., 489.
Glenospora clapieri on man in Algeria, 178.
Gliocladium penicillioides on pine in Holland, 358.
— *roseum* on paper in Italy, 696.
Gliricidia maculata, *Ganoderma pseudoferreum* on, in Malaya, 504.
Gloeodes pomigena on apple in Poland, 259.
— — on citrus in S. Africa, 796.
Gloeosporium on areca palm in India, 89.
— on coco-nut, 89.
— on guava in India, 233.

[*Gloeosporium*] on orange in New S. Wales and Queensland, 20.
— on *Piper betle* in India, 437.
— *album* on apple, control, 533; factors affecting, 118, 743; occurrence in Denmark, 118, 119; in England, 743; in Germany, 533; varietal reaction to, 744.
— *cyclaminis* on *Cyclamen persicum* in the Argentine, 478.
— *limetticolum* on citrus in Dutch E. Indies, 794.
— — on lime in Brazil, 672.
— *lunatum* on *Opuntia* in U.S.A., 810; transmission of, by *Chelindea vittiger*, 810.
— *medicaginis* synonym of *Stagonospora meliloti*, 320.
— *melongenae* on eggplant in the Philippines, 370.
— *musarum*, antagonism of *Actinomyces albus* to, 129.
— — on banana, control, 124, 327; factors affecting, 41; occurrence in Bulgaria, 413; in Fiji, 92; in Italian Somaliland, 124; in Japan, 41; in New S. Wales, 327.
— *perennans* renamed *Cryptosporiopsis perennans*, 762.
— *populi-alba*, *Titaeosporina tremulae* referred to, 140.
— *rosaecola* identical with *Sphaceloma rosarum*, 112.
— *taxi* on yew in Scotland, 75.
— *taxicola* synonym of *Cryptocline taxicola*, 75.
— *tremulae*, *Titaeosporina tremulae* referred to, 140.
Glomerella cingulata, antagonism of *Actinomyces albus* to, 129.
— — on apple, control, 235; occurrence in England, 744; in New Zealand, 235; in Southern Rhodesia, 784.
— — on coffee in the Belgian Congo, 21; in Italian E. Africa, 519.
— — on hops in U.S.A., 548.
— — on mango in India, 750; in Trinidad, 193.
— — on passion fruit in New Zealand, 331.
— — on privet in U.S.A., 11.
— — on tea in Sumatra, 579, 729.
— —, toxicity of phenothiazine and its derivatives to, 806.
— *gossypii* on cotton, associated with damping-off, 25; control, 105, 373, 787; factors affecting, 373; occurrence in the Belgian Congo, 248; in India, 373; in U.S.A., 25, 105, 175, 519, 787; variation in, 175; varietal reaction to, 373.
Glomosporium, a new smut genus, 552.
Gloxinia (*Sinningia speciosa*), *Cylindrocarpon radicicola* on, in Holland, 154.
—, *Phytophthora cryptogea* on, in U.S.A., 316.
Glycine, see Soy-bean.
Gnomonia iliau on sugar-cane in Brazil, 624.
— *leptostyla* on walnut in U.S.A., 354.
[*Gnomonia*] *ulmea* on elm, control, 147; occurrence in Canada, 146; in U.S.A., 11, 354, 375; specific reaction to, 146, 375; study on, 146.
— *veneta* on oak in U.S.A., 354.
— — on *Platanus* in N. America, 827.
— — on sycamore in U.S.A., 354.
Godetia hybrida, *Alternaria* on, in Denmark, 596.
Gonytrichum caesium associated with 'heart' of *Eucalyptus regnans* in Australia, 656.
Goodyera repens var. *ophioides*, *Rhizoctonia borealis* on, forming mycorrhiza in U.S.A., 801.
Gooseberry (*Ribes grossularia*), *Byssochlamys fulva* on, in England, 191.
—, *Phomopsis ribis* on, in France, 324; *Eutypa lata* var. *ribis* perfect stage of, 324.
—, (?) *Sphaerotheca mors-uvae* on, in U.S.S.R. 39.
Gossypium, see Cotton.
Gramineae, see Grasses, Turf.
Granosan, use of, for disinfecting clover seed, 115; *Scorzonera tau-saghyz* seed, 137.
Grapefruit (*Citrus paradisi*), albinism in, in Palestine, 247.
—, *Ascochyta citri* on, in Brazil, 672.
— blotching in S. Africa, 805.
—, *Botrydiplodia theobromae* on, in Trinidad, 193.
—, *Clasterosporium maydicum* on, in Trinidad, 193.
—, cold storage injury of, in S. Africa, 805.
—, *Colletotrichum* on, in Sierra Leone, 156.
—, — *gloeosporioides* on, in Trinidad, 193.
—, *Corticium centrifugum* on, in Japan, 205.
—, — *salmonicolor* on, in Sierra Leone, 156.
—, *Curvularia lunata* on, in Trinidad, 193.
—, *Diaporthe citri* on, in the Argentine, 238; in Puerto Rico, 308; in Trinidad, 193.
—, *Diplodia natalensis* on, in Dutch E. Indies, 795; in Trinidad, 193.
— disease control in Trinidad, 450.
—, *Elsinoe fawcetti* on, in Puerto Rico, 308.
—, *Fusarium expansum* on, in Trinidad, 193.
—, *Guignardia* on, in Trinidad, 193.
— (?) leprosis in Sierra Leone, 156.
— mottle leaf in Puerto Rico, 376.
—, *Penicillium italicum* on, in Trinidad, 193.
—, *Pestalozzia* on, in Sierra Leone, 156.
—, — *leprogena* on, in Trinidad, 193.
—, *Phoma citricarpa* on, in Dutch E. Indies, 795.
—, *Phytophthora* on, in Puerto Rico, 308.
—, psorosis of, in Puerto Rico, 308; in U.S.A., 100.
—, *Trichoderma lignorum* on, in Trinidad, 193.
Graphium penicillioides, see *Ceratostomella piceae*.

[*Graphium*] *pycnocephalum* associated with *Ips* in Poland, 488.
— *rubrum* on *Machilus thunbergii* in Japan, 828.
Grasselli spreader, use of, 598, 786.
Grasses, *Calonectria graminicola* on, in Sweden, 298.
—, *Dothichloe limitata* on, in U.S.A., formerly referred to *D. atramentosa*, 683.
—, *Mastigosporium album* var. *calvum* on, in Europe, 34; renamed *M. calvum*, 34.
—, *Ustilago bullata* and *U. striaeformis* on, in U.S.A., 441.
—, see also Turf.
Grasshoppers, *Empusa grylli* on, in England, 736; in Hungary, 140.
Greengage, see under *Prunus divaricata*.
Grevillea robusta, *Pestalozzia* on, in India, 822.
— —, *Phyllosticta* on, in Ceylon, 713, 822; in India, 822.
Grey speck of oats in Denmark, 668.
— — of rye and wheat in Denmark, 88.
— —, see also Manganese deficiency.
Griphosphaeria corticola on rose in England, 597; conidial stage referred to *Coryneum microstictum*, 598.
Groundnut (*Arachis hypogaea*),*Cercospora arachidicola* on, in U.S.A., 236, 433.
—, — *personata* on, control, 236, 373, 433; development of perithecial stage of, 571; occurrence in India, 373; in the Philippines, 433; in U.S.A., 236, 433; overwintering of, 433.
—, *Corticium solani* on, in U.S.A., 788.
—, damping-off of, in U.S.A., 440.
—, *Diplodia* on, in Burma, 156.
—, *Fusarium* (?) *angustum* on, in S. Africa, 438.
—, — *vasinfectum* on, in U.S.A., 788.
—, *Gibberella fujikuroi* on, in U.S.A., 788.
—, *Macrophomina phaseoli* on, in Burma, 156; in U.S.A., 788.
— mosaic in China, 608.
—, *Mycosphaerella arachidicola* on, see *Cercospora arachidicola* on.
—, — *berkeleyii* on, see *Cercospora personata* on.
—, *Puccinia arachidis* on, in Venezuela, 141.
—, *Rhizoctonia* on, in S. Africa, 438.
— rosette in Madagascar, 652; in Nigeria, 434; transmission of, by *Aphis laburni*, 652.
—, *Sclerotium rolfsii* on, in U.S.A., 788.
Grouse, *Aspergillus fumigatus* on, in Norway, 591.
Growth factors for micro-organisms, review of literature on, 335.
Guava (*Psidium guajava*), *Botryosphaeria ribis* var. *chromogena* on, in Southern Rhodesia, 784.
—, *Gloeosporium* on, in India, 233.
—, *Pestalozzia psidii* on, in India, 233.
Guignardia on avocado in Trinidad, 193.
— on grapefruit in Trinidad, 193.
— on lucerne in U.S.S.R., 397.
— on mango in Trinidad, 193.
[*Guignardia*] on papaw and tomato in Trinidad, 194.
— *bidwellii* on vine in the Argentine in the imperfect stage (*Phoma uvicola*), 478.
Guinea-pig, *Trichophyton mentagrophytes* on the, 177.
—, — *sulphureum* and *T. violaceum* can infect, 523.
Gymnosporangium on apple, cedar, hawthorn, and *Juniperus* in U.S.A., 354.
— *clavipes* on apple and *Juniperus* in U.S.A., 533.
— *confusum* on *Juniperus* in India, 59.
— *globosum* on apple in U.S.A., 533.
— *juniperi-virginianae* on apple in U.S.A., 321, 533.
— *sabinae* on pear in Bulgaria, 413.
Gypsophila, *Sclerotium delphinii* can infect, 183.
— *elegans*, *Alternaria* on, in Denmark, 572.
Gypsum as a filler, 93.
—, effect of, on mushroom composts, 230.

Hainesia on strawberry in England, 809.
Hamamelis, *Nectria coccinea* can infect, 280.
— *virginiana*, *Pezicula hamamelidis* on, *Cryptosporiopsis* conidial stage of, 761.
Haplobasidium pavoninum on *Aquilegia* in England, 401, 724.
Haplosporella vivanii on wood pulp in Italy, 362.
Harposporium anguillulae on nematodes in U.S.A., 107; *Polyrhina multiformis* synonym of, 107.
Heleopera sylvatica, *Cochlonema bactrosporum* on, in U.S.A., 454.
Helianthus annuus, see Sunflower.
— *tuberosus*, *Sclerotinia minor* on, 628.
Helicobasidium compactum on *Araucaria cunninghamii* in Queensland, 503.
— — on *Hevea* rubber in Java, 546.
— — on tea in Sumatra, 579.
— *purpureum* on *Acer campestre* in Italy, 479.
— — on asparagus in England, 779.
— — on beet in U.S.A., 76.
— — on mangold in England, 654.
— — on *Urtica dioica* in Italy, 479.
— —, wild hosts of, in England, 654.
Heliothis obsoleta, *Spicaria heliothis* on, in U.S.A., 252.
Helminthosporium in relation to asthma and hay fever of man, 679.
— on *Cinchona* in Sumatra, 578.
— on date palm in U.S.A., 20.
— on oil palm in Malaya, 503.
— *gramineum* on barley, breeding against, 666; occurrence in Italy, 580; in U.S.A., 388; in U.S.S.R., 666; varietal reaction to, 388, 666.
— — on oats and wheat in Italy, 580.
— *halodes* on sorghum in Italy, 517.
— *heveae* on *Hevea* rubber in Ceylon, 655.
— *inconspicuum* on *Festuca elatior* in Holland, 154.
— *maydis* imperfect stage of *Ophiobolus heterostrophus*, 245.

[*Helminthosporium*] *nodulosum* on *Eleusine coracana* in Italian E. Africa, 185.
— *papayae* on papaw in Malaya, 505.
— *sacchari* on sugar-cane in Brazil, 624; in Egypt, 625; in Jamaica, 92; in the Philippines, 626.
— *sativum* on cereals, review of work on, in Canada, 660; seed tests for, in U.S.A., 93.
— — on oats, seed tests for, in U.S.A., 93.
— — on wheat, control, 93, 97; effect of, on seed, 513; factors affecting, 97; occurrence in Canada, 515, 733; in Victoria, 97; root development in relation to, 515; soil micro-organisms in relation to, 733.
— *sigmoideum* var. *irregulare* on rice in U.S.A., 815.
— *stenospilum* on sugar-cane in Brazil, 624; in Hawaii, 477.
(?) — *torulosum* on banana in Haiti, 328.
— *turcicum* on maize in the Philippines, 444; in S. Africa, 438.
— — on sorghum in Italy, 517; in S. Africa, 438.
(?) *Helotium* on *Lolium perenne* in New Zealand and other countries, 601.
Hemileia (?) *americana* on orchid in Holland, 154.
(?) — *coffeicola* on coffee in W. Africa, 711.
— (?) *oncidii* on orchid in Holland, 154.
— *vastatrix* on coffee, control, 21, 22, 735; factors affecting, 22, 735; occurrence in the Belgian Congo, 21; in India, 735; in Italian E. Africa, 22; in Tanganyika, 21; varietal reaction to, 22.
Hemp (*Cannabis sativa*), potash deficiency in, in Germany, 54.
—, *Sclerotinia sclerotiorum* on, in Germany, 494.
Hendersoniella in Australia, 627.
Hendersonina sacchari on sugar-cane in India, 307; relationship of, to *Diplodia zeae*, 307.
Hendersonula can infect *Agathis palmerstoni* and *A. robusta*, 503.
— on *Agathis australis* in Queensland, 503.
Hesperis matronalis, *Matthiola incana* var. *annua* mosaic can infect, 459.
Heterodera marioni on pineapple, control of, by fungi, 737.
Heterosporium gracile on iris in England, 31.
— *syringae* on lilac in England, 654.
Heuchera sanguinea, *Bacterium fascians* on, 597; in Germany, 33.
Hevea brasiliensis, see Rubber.
Hibiscus, *Bacterium hibisci* on, in U.S.S.R., 379.
— *esculentus*, *Ascochyta abelmoschi* on, in Bulgaria, 413.
— —, *Myrothecium roridum* on, in Sierra Leone, 157.
— —, (?) tobacco leaf curl of, in Sierra Leone, 157.
— *manihot*, *Phytophthora parasitica* on, host range of, 742; occurrence in Japan, 742.
[*Hibiscus*] *mutabilis*, *Sphaerotheca humuli* var. *fuliginea* on, in Japan, 84.
Hickory (*Carya*), *Nectria coccinea* on, in U.S.A., 558.
—, *Poria andersonii* on, in U.S.A., 487.
Himantia on sugar-cane in Egypt, 625.
— *stellifera* on sugar-cane in Brazil, 346; in Egypt, 625.
Hippeastrum vittatum, *Stagonospora curtisii* on, in Denmark, 572.
Histoplasma capsulatum on man, status of, 457.
Holcus sorghum, see Sorghum.
Holly (*Ilex*), *Boydia insculpta* on, in U.S.A., 529.
Hollyhock (*Althaea*), damping-off of, in U.S.A., 440.
—, *Sclerotium delphinii* can infect, 183.
Hops (*Humulus lupulus*), *Colletotrichum humuli* on, in U.S.A., 548.
—, diseases of, book on, 398.
—, *Gibberella pulicaris* on, *Fusarium sambucinum* imperfect stage of, 760; occurrence in England, 760.
—, *Glomerella cingulata* on, in U.S.A., 548.
—, (?) infectious sterility of, in England, 295.
—, nettlehead disease of, in England, 654, 817.
—, *Penicillium humuli* on, in Germany, 315.
—, *Phytophthora cactorum* on, in New Zealand, 55.
—, *Pseudoperonospora humuli* on, control, 236, 818; factors affecting, 818; occurrence in England and Scotland, 818; in Switzerland, 139; in U.S.A., 236.
—, *Sclerotinia sclerotiorum* on, 628.
—, 'slip down' of, in U.S.A., 236.
—, *Verticillium albo-atrum* and *V. dahliae* on, in England, 709.
Hordeum nodosum, *Ustilago hordei* and *U. nigra* can infect, 666.
— *vulgare*, see Barley.
Hormiscium gelatinosum on timber in U.S.A., 285.
Hormodendrum in relation to asthma and hay fever of man, 254, 679, 799.
— on man in the Argentine, 800.
—, spread of, in the air, in U.S.A., 108.
— *chamaeleon* and *H. elatum* on wood pulp in Italy, 362.
— *pedrosoi* on man, Gram reaction of, 523; occurrence in Algeria, 178; in Brazil, 28.
— *rossicum* on man in U.S.S.R., 109.
Horse, *Rhinosporidium equi* and (?) *R. seeberi* on the, in India, 454.
—, *Scopulariopsis danica* on the, in Denmark, 315.
—, toxicity of *Claviceps paspali* on *Paspalum dilatatum* to the, 460.
Horse-chestnut (*Aesculus hippocastanum*), *Ustulina vulgaris* can infect, 70.
Horse-radish (*Cochlearia armoracia*), *Alternaria brassicae*, *Ascochyta rusticana*, *Botrytis cinerea*, *Cystopus candidus*, *Erysiphe polygoni*, mosaic, *Phoma lin-*

gam, Ramularia armoraciae, Septoria armoraciae, and *Verticillium armoraciae* on, in Germany, 365.
Hortosan B, use of, in cotton seed treatment, 373.
Hot-water seed treatment against *Pseudomonas campestris* on kale, 565; against *Ustilago nuda* on barley, 242; against *U. tritici* on wheat, 96, 514.
— — treatment against chlorotic streak of sugar-cane, 274, 478; against phony disease of peach, 323; against *Septoria apii-graveolentis* on celery, 291.
— — — of soil against damping-off, 332.
Humulus japonicus, Pseudoperonospora cubensis can infect, 86.
— *lupulus,* see Hops.
Humus, treatise on, 54.
Hyacinth (*Hyacinthus*), (?) cucumber virus 1 affecting, in England, 182.
—, *Sclerotinia bulborum* on, in England, 724.
Hydrangea, Microsphaera polonica on, in Italy, 458.
Hydrogen-ion concentration of soil in relation to *Actinomyces scabies* on potato, 200, 475, 612; to *Bacterium solanacearum,* 474, 788; to *Bact. tumefaciens* on peach, 159; to crinkle leaf of cotton, 23; to *Fusarium orthoceras* and *F. solani* on strawberry, 40; to *F. vasinfectum* on cotton, 453; to lupin necrosis, 258; to Mucorales in the soil, 138; to *Phytophthora cambivora* on *Rhododendron,* 33; to physiological diseases of barley and oats, 99; to *Pythium* on maize and sugar-cane, 618; to 'speckled yellow' disease of beet and mangold, 226.
— sulphide, use of, as a fungicide, 644.
(?) *Hylesinus kraatzi* and (?) *H. vittatus* transmitting *Ceratostomella ulmi* on elm, 641.
Hymenostilbe arachnophila, Cordyceps thaxteri perfect stage of, 798.
Hyoscyamus niger, potato yellow dwarf virus can infect, 270.
— virus 3, intracellular inclusions caused by, 416.
— — —, note on, 60.
— — — on tobacco, 202.
Hypocapnodium on sugar-cane, *Ceratovacuna lanigera* in relation to, 56; occurrence in Japan, 56.
Hypochnus solani var. *brassicae* can infect colza and rape, 493.
— — var. *typica* on colza in Germany, 493.
— —, see also *Corticium solani.*
Hypocrea gelatinosa (?) identical with *H. rufa,* 761.
— *pulvinata,* note on, 761.
— *rufa, H. gelatinosa* (?) identical with, 761; *Trichoderma viride* conidial stage of, 761.
Hypodermella laricis on larch in N. America, 827.
— *sulcigena* on pine in Czechoslovakia, 490.
Hypoflavin, toxicity of, to *Plasmopara viticola,* 508.
Hypoxylon on timber in U.S.A., 356.
— *pruinatum* on aspen in U.S.A., 1.
Hysteroneura setariae transmitting sugar-cane mosaic, 761.

Iberis umbellata, Alternaria brassicae on, in Denmark, 572.
Ilex, see Holly.
Immunity, humoral, of plants against *Bacterium tumefaciens,* 238.
Immunization of clover against *Rhizoctonia solani* var. *ambigua,* 543, 757; against (?) *Stemphylium botryosum,* 543; 757; of maize against *Rhizoctonia solani* var. *ambigua,* 543; of plants against virus diseases, 45; of potato against potato virus X, 130.
Impatiens balsamina, Pseudoperonospora cubensis can infect, 86.
— —, *Sclerotium delphinii* can infect, 183.
— —, *Sphaerotheca humuli* var. *fuliginea* on, in Japan, 84.
Imprägnit, use of, against *Sphaerotheca pannosa* on rose, 528.
Indiella mansoni on man in Hungary, 111.
Indigofera dosua, Rosellinia arcuata on, in Ceylon, 713.
— *suffruticosa* and *I. tinctoria, Uromyces indigoferae* on, in U.S.A., 820.
Indoleacetic acid, effect of, on *Arum maculatum* mycorrhiza, 470; on *Bacterium tumefaciens* tumours, 446; on *Ustilago zeae,* 18.
Injection of chemicals into plants for control and diagnosis of disease, 539.
Inosit, effect of, on fungi, 336; on growth of mycorrhizal fungi, 542.
Insecticides, incorporation of, with fungicides, 120.
Iodine injury, 692.
—, use of, against narcissus bulb rots, 654; against sugar-cane mosaic, 623; to differentiate Polypores, 645.
Iodized paper wrappers, use of, against storage rots of mangosteen, 156.
Ipomoea batatas, see Sweet potato.
Ips, fungal associates of, in Poland, 488.
— *lecontei, Ceratostomella ips* on, in U.S.A., 772.
Irene, Irenina, and *Irenopsis* subgenera of *Meliola,* 58.
Iris, Bacterium tardicrescens on, in U.S.A., 31.
—, *Botrytis* on, in England, 31.
—, (?) *Didymellina macrospora* on, in England, 31; in Germany, 599.
—, *Erwinia carotovora* on, in England, 31.
—, *Heterosporium gracile* on, in England, 31.
— mosaic in Denmark, 572.
—, *Puccinia iridis,* effect of, on host, 128; occurrence in U.S.A., 128.
—, *Sclerotinia convoluta* on, in Canada, 725.
— scorch in England, 31.
— *cristata, Bacterium tardicrescens* can infect, 31.
— *florentina, Stagonospora iridis* on, in Cyprus, 91.

[*Iris*] *germanica* mosaic in Italy, 739.
— *kaempferi*, *I. missouriensis*, *I. orientalis*, *I. sibirica*, and *I. tenax*, *Bacterium tardicrescens* can infect, 31.
Iron deficiency in coffee, 22.
— — in potato, 545.
— pyrophosphate, use of, against chlorosis of peach, 35; of pear, 36.
— sulphate, use of, against *Bacterium tabacum*, mosaic, and *Thielaviopsis basicola* on tobacco, 635; against *Fusarium conglutinans* var. *callistephi* on China aster, 113; against vine chlorosis, 435, 499.
—, see also Ferric, Ferrous.
Irpex on *Diospyros discolor* in the Philippines, 490.
— *subvinosus* on cover crops in Malaya, 342.
Isaria arachnophila, see *Hymenostilbe arachnophila*.
— *strigosa* on ants in Germany, 736.

Jatropha curcas, *Phytophthora parasitica* var. *nicotianae* can infect, 419.
Jerusalem artichoke, see *Helianthus tuberosus*.
Johnson grass, see *Sorghum halepense*.
Juglans, see Walnut.
Juniperus, *Coryneum cardinale* on, 149; in U.S.A., 492.
—, *Gymnosporangium* on, in U.S.A., 354.
—, — *clavipes* on, in U.S.A., 533.
—, — *confusum* on, in India, 59.
—, *Phomopsis* (?) *juniperovora* on, in U.S.A., 444.
— *bermudiana*, *Fomes subroseus* and *Pestalozzia unicolor* on, in Bermuda, 505.
— *communis*, *Mycelium radicis atrovirens*, *M. r. juniperis*, and *M. r. nigrostrigosum* on, forming mycorrhiza, in Sweden, 700–1.
— —, *Rhizoctonia juniperi* on, in Sweden, 700.
— *recurva* resistant to fungal decay, 76.
Jute (*Corchorus capsularis* and *C. olitorius*), potash deficiency in, in Germany, 54.

Kabatiella caulivora on clover in U.S.S.R., 600.
Kalanchöe daigremontiana, tumours induced by scharlach red in, 580.
Kale (*Brassica oleracea* var. *acephala*), *Pseudomonas campestris* on, in U.S.A., 565.
—, radish mosaic can infect, 427.
Kalmia latifolia, *Ovulinia azaleae* on, in U.S.A., 742.
Kayso, use of, against *Diplocarpon rosae* on rose, 440.
Kharki, use of, against *Peronospora tabacina* on tobacco, 64.
Kieserite, use of, against magnesium deficiency in fruit trees, 743; in the potato, 201.
Kohlrabi (*Brassica oleracea* var. *caulorapa*), *Plasmodiophora brassicae* on, in Palestine, 275.
—, radish mosaic can infect, 427.
Kolofog, effect of, on assimilation in apple, 443.
Kupferstaub Schering, use of, against *Plasmopara viticola* on vine, 87.

Labarraques solution, composition of, 151.
— —, use of, against *Phytophthora* on asparagus, 151.
Laburnum vulgare, *Ceratophorum setosum* can infect, 460.
Labyrinthula on *Zostera marina* in British waters, 334; in Holland, 334.
Lachnus roboris in relation to oak 'goitre', 487.
Lactarius helvus on pine and spruce, forming mycorrhiza, in Sweden, 542.
— *rufus* on pine, forming mycorrhiza, in Sweden, 542.
Lactuca indica var. *dracoglossa*, *Sphaerotheca humuli* var. *fuliginea* on, in Japan, 84.
— *sativa* and *L. scariola*, see Lettuce.
Larch (*Larix*), *Alternaria tenuis* on, in Holland, 358.
—, *Botrytis cinerea* on, in Holland, 358.
—, *Dasyscypha willkommii* on, in Holland and Rumania, 74.
—, *Fomes annosus* on, in Denmark, 772; in Holland, 74.
—, — *pini* on, in Norway, 559.
—, *Hypodermella laricis* on, in N. America, 827.
—, *Leptothyrium* on, in Holland, 358.
—, *Polyporus schweinitzii* on, in Norway, 559.
—, *Trichoderma lignorum* on, in Holland, 358.
Larkspur, see *Delphinium*.
Lasiobotrys lonicerae on *Lonicera nigra* in France, 113.
Lathyrus, *Cercospora viciae* on, in the Dominican Republic, 58.
— *odoratus*, see Sweet pea.
Lavender (*Lavandula*), *Armillaria mellea* on, in England, 724.
—, *Sclerotium delphinii* can infect, 183.
Lead content of soils, effect of, on sugar-cane mosaic, 623.
— arsenate, use of, with fungicides, 347.
Ledum decumbens and *L. groenlandicum*, *Chrysomyxa ledicola* on, in Alaska, 643.
Leek (*Allium porrum*), *Fusarium culmorum* on, in England, 779.
Legislation against *Bacillus vitivorus* on Vitaceae, 768.
— — barberry and buckthorn importation in Kenya, 560.
— — *Cercospora musae* on banana in Colombia, 144; in St. Lucia, 640; on *Musa* in the Dominican Republic, 560.
— — citrus diseases in Algeria, 288; in Nyasaland, 640.
— — *Colletotrichum atramentarium* on potato in Java, 813.
— — cotton diseases in Algeria, 288.
— — *Cronartium ribicola* on pine in U.S.A., 80.
— — fruit tree diseases in England, 496.

[Legislation against] *Marasmius perniciosus* on cacao in St. Lucia, 768.
— — pineapple diseases in Zanzibar, 288.
— — plant diseases in Albania, 768; in the Argentine, 496; in Australia, 368, 496, 768; in Bermuda, 704; in Bolivia, 768; in British Honduras, 80; in Ceylon, 768; in Colombia, 368; in England, 768; in French Morocco, 368; in the Gold Coast, 768; in Greece, 768; in Italy, 368, 768; in Jamaica, 768; in Java, 813; in Kenya, 368; in Korea, 768; in Latvia, 224, 368; in Malaya, 368, 768; in New Zealand, 368; in Nigeria, 768; in Rumania, 432, 768; in Scotland, 768; in Switzerland, 496; in Tunis, 496; in Turkey, 368; in U.S.A., 768; in Wales, 768; in Yugoslavia, 768.
— — potato virus diseases in Germany, 432; in S. Africa, 832.
— — *Sclerospora sacchari* on sugar-cane, 432.
— — sugar-cane mosaic in Colombia, 144.
— — *Synchytrium endobioticum* on potato in Denmark, 704; in Japan, 432; in Latvia, 224.
— — yellow dwarf of onions in New Zealand, 704.
—, see also Plant quarantine.
Lemon (*Citrus limonia*), albinism in, in Palestine, 247.
—, *Ascochyta citri* on, in Brazil, 672.
—, *Deuterophoma tracheiphila* on, in Italy, 245.
—, *Diaporthe citri* on, in Cyprus, 91.
—, *Diplodia natalensis* on, in Dutch E. Indies, 795.
—, *Elsinoe fawcetti* on, in Puerto Rico, 308.
—, exanthema and internal decline of, in Cyprus, 91.
— mottle leaf in Cyprus, 91; in New Zealand, 103.
—, physiological disorders of, in U.S.A., 673.
—, *Phytophthora citrophthora* on, in U.S.A., 247.
— pitting in U.S.A., 673.
—, *Pseudomonas citriputeale* on, in U.S.S.R., 445.
— psorosis in U.S.A., 671.
—, *Pythium ultimum* can infect, 497.
—, *Rhizoctonia bataticola* on, 249.
—, *Sphaerostilbe repens* on, in Malaya, 504.
— wastage in S. Africa, 437.
— xyloporosis in Brazil, 101.
Lentils (*Lens esculenta*), *Uromyces fabae* on, in Palestine, 204.
Lentinus lepideus on timber, control, 830; factors affecting, 4; note on, 775; occurrence in Great Britain, 361; in Sweden, 220; in U.S.A., 830; specific reaction to, 221; study on, 221; use of, in tests of preservatives, 829.
— *squamosus*, see *L. lepideus*.
— *tigrinus*, hosts of, in Yugoslavia, 559.
Lenzites on timber in Finland, 564; in Germany, 357.
— *abietina* on timber, factors affecting, 360; note on, 775; occurrence in Great Britain, 361.
— —, production of oxalic acid by, 426.
— *gibbosa*, *Trametes gibbosa* renamed, 719.
— *sepiaria*, effect of growth substances on, 335.
— — on timber, control, 830; factors affecting, 360; occurrence in Great Britain, 361; in U.S.A., 285, 830; specific reaction to, 221; study on, 221.
— *trabea* on timber, control, 5, 285; factors affecting, 4; occurrence in Bermuda, 285; in Great Britain, 361; in U.S.A., 285; specific reaction to, 221.
Lepidium sativum, lime-induced abnormalities in, in Switzerland, 29.
Leptinotarsa decemlineata, *Beauveria bassiana* on, in U.S.A., 591.
Leptoglossus membranaceus transmitting *Nematospora coryli* on citrus, 795.
Leptographium penicillatum, see *Ophiostoma penicillatum*.
— *serpens* on timber in Poland, 488; *Scopularia serpens* synonym of, 488.
Leptosphaeria dumetorum, *L. dumetorum* f. *meliloti*, *L. eustoma* f. *major*, and *L. meliloti* synonyms of *Leptosphaeria pratensis*, 320.
— *pratensis*, ascigerous stage of *Stagonospora meliloti*, 320.
— *sacchari* on sugar-cane in Brazil, 624; in Egypt, 625; in the Philippines, 625.
— *salvinii* on rice in U.S.A., 815.
— *tigrisoides* on bamboo in Japan, 205.
Leptothyrium on larch in Holland, 358.
— *coronatum* on lucerne in U.S.S.R., 397.
— *pomi* on apple in Poland, 259.
— *theae* on tea in India, 822.
Lespedeza stipulacea, *Sclerotium rolfsii* on, in U.S.A., 79.
Lethane as a spreader, 417, 440.
Lettuce (*Lactuca sativa* and *L. scariola*), *Bremia lactucae* on, control, 155; factors affecting, 8, 228, 471; occurrence in Germany, 7, 780; in New S. Wales, 155; in Palestine, 275; physiologic races of, 8; study on, 228; varietal reaction to, 7, 155.
—, *Bacterium marginale* on, in Bermuda, 506.
—, — *vitians* on, in U.S.S.R., 379.
—, *Botrytis cinerea* on, in Japan, 430.
— diseases, seed sterilization against, 228.
—, *Marssonina panattoniana* on, in England, 569.
— mosaic, host range of, 650, 784; occurrence in China, 608; in England, 650; transmission of, by *Myzus persicae*, 650.
—, *Pleospora herbarum* on, in S. Africa, 496.
—, tobacco brown root rot can affect, 716.
—, tomato spotted wilt affecting, in New Zealand, 235.
—, — tipblight can infect, 351.

Leucaena glauca, *Fomes lignosus* on, in Dutch E. Indies, 136, 137.
— —, — *noxius* on, in Sumatra, 729.
— —, *Pestalozzia theae* on, in Sumatra, 579.
Leveillula, host range of, 58. (See also *Oidiopsis*.)
Leytosan, use of, as a seed disinfectant, 514.
Libertella ribis (?) identical with *Phomopsis ribis*, 324.
Libocedrus decurrens, *Coryneum cardinale* on, 149; in U.S.A., 492.
Light, effect of, on *Bremia lactucae* on lettuce, 471; on *Cladosporium fulvum* on tomato, 142; on *Cystopus candidus* on radish and *Erysiphe graminis* on wheat, 471; on *Fusarium* spp., 609; on germinated rust spores, 793; on plant diseases, 39; on *Puccinia anomala* on barley, 666; on *P. triticina* on wheat, 471; on *Thielaviopsis basicola* on tobacco, 635; on *Uromyces appendiculatus* on beans, 471.
—, polarized, use of, in the study on timber decay, 774.
—, see also Infra-red rays, Ultra-violet rays, X-rays.
Lightning injury of vine in S. Australia, 152.
Lignasan, composition of, 363.
—, use of, as a timber preservative, 363, 425.
Ligustrum japonicum, *Pseudomonas fraxini* can infect, 825.
— *vulgare*, see Privet.
Lilac (*Syringa vulgaris*), *Heterosporium syringae* on, in England, 654.
—, *Pseudomonas syringae* on, in Holland, 154.
Lily (*Lilium*), *Botrytis elliptica* on, in U.S.A., 443.
—, *Colletotrichum gloeosporioides* on, in Bermuda, 506.
—, cucumber mosaic affecting, in England, 182; in U.S.A., 318; transmission of, to tulip, 318.
—, latent lily virus in, in U.S.A., 318; relation of, to lily mosaic and tulip breaking, 318.
— mosaic in England, 182; in U.S.A., 318; relation of, to tulip breaking, 318.
—, *Phytophthora parasitica* on, in Bermuda, 506.
—, *Sclerotium delphinii* on, in Holland, 153.
—, *Uromyces holwayi* on, in Japan, 141.
Lima bean, see *Phaseolus lunatus*.
Lime (*Citrus aurantiifolia*), *Gloeosporium limetticolum* on, in Brazil, 672.
—, *Phytophthora parasitica* on, in Trinidad, 671.
—, *Pseudomonas citri* on, in India, 234; in Malaya, 504.
Lime injury, 352, 443.
—, use of, against damping-off of beet, 5.
—, high magnesium, use of, in Bordeaux mixture, 237.
—, hydrated, toxicity of, to *Sclerotinia fructicola*, 443.
—, —, use of, after copper treatment of wheat seed, 12; with manganous sulphate, 673; with zinc sulphate against little leaf of fruit trees, 261, 688.
[Lime]-induced abnormalities in vegetables, 29.
— -sulphur, decomposition of, in air, 194.
— —, effect of, on photosynthesis in apple, 686.
— — injury, 433, 577, 727, 750, 807.
— — paste, use of, as a wound dressing, 518.
— —, table for diluting stock solutions of, 655.
Lime tree (*Tilia*), *Ustulina vulgaris* on, 70; in Denmark, 1.
— —, witches' broom of, in Holland, 281.
Linospora tetraspora on poplar in Canada, 767.
Linseed oil, use of, as an adhesive, 193, 373.
Linum usitatissimum, see Flax.
Liver of sulphur, use of, against *Diplocarpon rosae* and *Sphaerotheca pannosa* on rose, 598.
Locusts, *Aspergillus flavus* on, in France, 310.
Loganberry (*Rubus loganobaccus*), *Byssochlamys fulva* on, in England, 191.
—, *Elsinoe veneta* on, in England, 325.
Lolium annuum var. *westerwoldicum*, *Pythium* spp. on, antagonism of micro-organisms to, 47.
— *perenne*, (?) *Helotium* on, in New Zealand and other countries, 601.
— —, *Pullularia* on, in New Zealand, 186.
— —, *Sclerotinia borealis* on, in Sweden, 298.
Lonicera nigra, *Lasiobotrys lonicerae* on, in France, 113.
Lophodermium macrosporum on spruce in Scotland, 218; synonym of *Lophodermellina macrospora*, 218.
— *pinastri*, effect of growth substances on, 336.
— — on pine in U.S.A., 360.
— —, use of, for estimating biotin, 542.
Loquat (*Eriobotrya japonica*), *Botryosphaeria ribis chromogena* on, 658.
—, *Botrytis cinerea* on, in Greece, 10.
—, *Corticium centrifugum* on, in Japan, 205.
—, (?) *Erwinia amylovora* on, in Bermuda, 506.
—, *Sclerotinia laxa* on, in Greece, 10.
Lotus corniculatus, mycorrhiza of, in Italy, 471.
— *hispidus*, *Pisum* virus 3 can infect, 648.
Loxostege sticticalis, control of, by means of *Beauveria bassiana* and Métalnikov's bacilli, 379.
Lucerne (*Medicago sativa*), *Aplanobacter insidiosum* on, in U.S.A., 258; in U.S.S.R., 379.
—, *Ascochyta imperfecta* on, in U.S.A., 11.
—, — *pisi* on, in U.S.S.R., 397.
—, bacteriophage in relation to failure of, 786.
—, broad bean mosaic can infect, 649.
—, *Cercospora medicaginis* on, in U.S.S.R., 397.

[Lucerne], *Corticium solani* on, in U.S.A., 759; in U.S.S.R., 398.
—, dying-off of, in New S. Wales, 398.
—, *Guignardia* on, in U.S.S.R., 397.
—, leaf spot of, in U.S.S.R., 398.
—, *Leptothyrium coronatum* on, in U.S.S.R., 397.
—, *Macrophomina phaseoli* on, in New S. Wales, 398.
— mosaic in China, 607.
—, *Peronospora trifoliorum* on, in U.S.S.R., 398.
—, *Phyllosticta medicaginis* on, in Hawaii, 658; in U.S.S.R., 397.
—, *Pseudopeziza medicaginis* on, in U.S.S.R., 397.
—, *Pythium de Baryanum* on, antagonism of micro-organisms to, 47.
—, *Pythium ultimum* on, in U.S.A., 497.
—, *Rhizoctonia* on, in U.S.S.R., 77.
—, — *lamellifera* on, 249.
—, *Sphaerella circumvaga* on, in U.S.S.R., 398.
—, *Stagonospora meliloti* on, in U.S.A., 320.
—, *Stemphylium sarcinaeforme* can infect, 717.
—, tobacco brown root rot can affect, 716.
—, *Uromyces striatus* on, factors affecting, 397; occurrence in U.S.A., 375; in U.S.S.R., 397; in Venezuela, 141; varietal reaction to, 397.
— yellow top in U.S.A., 817.
Luffa acutangula, *Pseudoperonospora cubensis* on, in Ceylon, 655.
Lupin (*Lupinus*), *Ascochyta pinodella* on, 832.
—, bacteriorrhiza of, in U.S.S.R., 128.
—, browning of, due to a virus, in Germany, 116.
—, *Ceratophorum setosum* on, 460; in Estonia, 655; in Germany, 116.
— chlorosis in Germany, 258; in U.S.A., 702; study on, 530.
—, *Corticium solani* on, in Germany, 116, 832.
—, cucumber virus 1 affecting, in England, 784; in Germany, 509, 803; transmission of, by *Aphis rhamni*, 509, 803; by *A. rumicis*, *Myzus persicae*, and *M. pseudosolani*, 803.
—, *Erysiphe polygoni* on, in Spain, 599.
—, *Fusarium avenaceum* on, 832.
—, — *oxysporum* on, in Germany, 116, 832.
—, — *solani* on, 832.
— mosaic in Germany, 803.
—, *Pisum* virus 3 affecting, 648.
—, *Pythium de Baryanum* on, 832.
—, *Sclerotinia trifoliorum* on, in Sweden, 299.
—, *Sclerotium delphinii* can infect, 183.
—, *Stemphylium sarcinaeforme*, *Thielaviopsis basicola*, and *Uromyces lupinicolus* on, in Germany, 116.
—, *Uromyces renovatus* on, in France, 549; in Germany, 116; in Portugal and Spain, 600.
Lychnis alba, *Corticium galactinum* on, in U.S.A., 321.
Lycopersicum esculentum, see Tomato.
— *hirsutum*, *Fusarium bulbigenum* var. *lycopersici* on, resistance to, 824.
— —, tolerance of, to tobacco mosaic, 824.
— *peruvianum*, *Fusarium bulbigenum* var. *lycopersici* on, resistance to, 825.

M 12, use of, against *Bacterium malvacearum* on cotton, 573.
Machilus thunbergii, *Graphium rubrum* on, in Japan, 828.
Macrophoma dalmatica on olive in Greece, 10.
— *musae* on banana in Japan, 41.
Macrophomina phaseoli on banana in Southern Rhodesia, 249.
— —, bean, beet, and *Begonia tuberhybrida* in U.S.A., 286.
— — on *Cosmos sulphureus* in Sierra Leone, 157.
— — on cotton, associated with damping-off, 25; biochemical study on, 674; occurrence in the Belgian Congo, 248; in India, 250, 674; in the Sudan, 391; in U.S.A., 25, 286; serological study on, 250.
— — on *Dolichos biflorus*, antagonism of *Trichoderma lignorum* to, 89; occurrence in India, 89.
— — on groundnut in Burma, 156; in U.S.A., 788.
— — on lemon in Southern Rhodesia, 249.
— — on lucerne in New S. Wales, 398.
— — on maize in the Argentine, 478.
— — on *Mucuna* in the Sudan, 392.
— — on *Phaseolus lunatus* in U.S.A., 82.
— — on sorghum in Italy, 517; in U.S.A., 389.
— — on strawberry and sweet potato in U.S.A., 286.
— — on *Tagetes erecta* in Sierra Leone, 157.
— — on tobacco in U.S.A., 634; *Sclerotium bataticola* a form of, 634.
— — on *Zinnia* in Sierra Leone, 157.
Macropsis trimaculata transmitting little peach and peach yellows, 376.
Macrosiphum matsumuraeanum transmitting red clover mosaic, 600.
— *pisi*, inhibition of tobacco mosaic virus by juice of, 540.
— — transmitting bean mosaic, 290; pea virus 1, 287.
— *solanifolii*, inhibition of tobacco mosaic virus by juice of, 540.
— — transmitting beet yellows, 429; passion fruit woodiness, 749; pea virus 1, 150, 287; potato crinkle mosaic, potato leaf roll, and potato mosaic, 50.
Macrosporium in the upper air, 44.
— on *Aucuba japonica* in Italy, 741; *Pleospora* stage of, 741.
— on cereals, control, 93.
— *carotae* on carrot in the Philippines, 444.
— *caudatum* on *Zinnia* in England, 654.
— *sarcinula*, *Stemphylium botryosum* identical with, 141.

[*Macrosporium sarcinula*], see also *Pleospora herbarum*.
— *sophorae* synonym of *Stemphylium sarcinaeforme*, 141.
Macrosteles divisus, inhibition of tobacco mosaic virus by juice of, 540.
Madurella (?) *americana* on man in Sumatra, 455.
— *mycetomi* on man in Algeria, 178.
Magnesium arsenate, use of, as a timber preservative, 220.
— deficiency in apple in England, 743.
(?) — — in beet in Belgium, 79.
— — in citrus in U.S.A., 518.
— — in coffee, 22.
— — in fruit trees, geographical distribution of, 743; in England, 743.
— — in oats in Holland, 240.
— — in potato in U.S.A., 201.
— — in wheat in relation to *Urocystis tritici*, 791.
— oxide, use of, against potato magnesium deficiency, 201.
— sulphate, use of, against magnesium deficiency in fruit trees, 743; in potato, 201.
Maize (*Zea mays*), *Aplanobacter stewarti* on, forecasting incidence of, 588; occurrence in U.S.A., 588; virulence of, 173, 244, 516.
—, *Aspergillus* on, in U.S.A., 18, 670.
—, — *flavus* and *A. tamarii* on, in U.S.A., 173.
—, *Bacterium vasculorum* on, 274, 625; in Mauritius, 374.
—, boron deficiency in, in Germany, 307.
—, *Cephalosporium acremonium* on, *C. gramineum* distinct from, 387; occurrence in Germany, Holland, and Italy, 387.
—, *Diplodia macrospora* on, in U.S.A., 17.
—, — *zeae* on, control, 93; nature of resistance to, 244; notes on, 17, 670; occurrence in U.S.A., 17, 93, 307, 669, 670; relationship of, to *Hendersonina sacchari*, 307; scolecospore formation in, 307; seed tests for, 93; testing of resistance to, 244; toxicity of, to livestock in S. Africa, 460.
— diseases in U.S.A., 517.
—, effect of ceresan on mitosis in, 164.
—, *Fusarium* on, in S. Africa, 438; seed tests for, in U.S.A., 93.
—, *Gibberella fujikuroi* on, in U.S.A., 17, 669.
—, — — var. *subglutinans* on, in U.S.A., 669.
—, — *saubinetii* on, control, 93, 332; factors affecting, 18; occurrence in U.S.A., 18, 93, 332, 669; seed tests for, 93.
—, *Helminthosporium turcicum* on, in the Philippines, 444; in S. Africa, 438.
—, hyperplasia of, in Queensland, 502.
—, little leaf of, in U.S.A., 43.
—, *Macrophomina phaseoli* on, in the Argentine, 478.
—, manganese deficiency in, in Germany, 307.
— mosaic in U.S.S.R., 297.
[Maize], *Nigrospora* on, control, 93; factors affecting, 244; occurrence in U.S.A., 93, 244, 734; seed tests for, 93.
—, — *oryzae* on, in U.S.A., 18.
—, — *sphaerica* on, in U.S.A., 18, 669.
—, *Ophiobolus heterostrophus* on, *Helminthosporium maydis* imperfect stage of, 245; occurrence in Germany, 245; in the Philippines, 444.
—, *Penicillium* on, in U.S.A., 18, 450, 670; protective action of, against *P. oxalicum*, 450.
—, — *glaucum* on, toxicity of, to geese in S. Africa, 460.
—, — *notatum* on, in U.S.A., 450; protective action of, against *P. oxalicum*, 450.
—, — *oxalicum* in U.S.A., 450.
—, *Puccinia maydis* on, genetics of resistance to, 670; occurrence in Palestine, 204; in U.S.A., 374.
—, *Pythium* on, in U.S.A., 618; *Trichoderma* antagonistic to, 618.
—, *Rhizoctonia solani* var. *ambigua* on, immunization against, 543, 757.
—, *Sclerospora philippinensis* on, in the Philippines, 444.
—, *Sorosporium reilianum* on, (?) toxicity of, to man, 111.
— streak in E. Africa, 727; in S. Africa, 573; transmission of, by *Cicadulina mbila*, 245, 727.
—, *Ustilago fischeri* on, in relation to maize smut poisoning, 111.
—, *Ustilago zeae* on, antagonism of Métalnikov's bacillus to, 380; control, 155; cultural study on, 670; effect of maize extracts on, 18; non-toxicity of, to guinea-pigs, 396; note on, 243; occurrence in Italy, 580; in New S. Wales, 155; in U.S.A., 243, 670; serological diagnosis of, 162; spine development in spores of, 173; toxicity of, to animals, 18, 396; to man, 111.
Malassezia furfur on man in Italy, 311.
Malbranchea bolognesii-chiurcoi, *M. kambayashii*, and *M. pulchella*, identity of, 526.
Malcomia maritima, see Virginian stock.
Malva, *Alternaria radicina* on, in Denmark, 573; renamed *Stemphylium radicinum*, 573.
Man, *Achorion* on, 179; Gram reaction of, 523.
—, — *gypseum* on, Gram reaction of, 523.
—, — *quinckeanum* on, in Algeria, 177.
—, — *schoenleini* on, culture medium for, 178; elimination of bacteria in cultures of, 110; occurrence in Algeria, 177; in China, 110, 523; in Italy, 311; in U.S.A., 310, 394; in Yugoslavia, 456.
—, *Acremonium potronii* on, in Algeria, 178.
—, *Acrotheca* on, in the Argentine, 800; in Brazil, 28.
—, *Actinomyces madurae* on, in Algeria, 178.
—, *Allantospora violacea* on, in Italy, 254.
—, *Allescheria boydii* on, in Algeria, 178.
—, *Arthrographis langeroni* on, in France, 593.

[Man], *Aspergillus* on, in America, 179; in the British Navy, 677; in China, 179.
—, — *fumigatus* on, Gram reaction of, 523.
—, — *niger* on, early records of, 313; occurrence in U.S.A., 313.
—, — *nigricans* on, in U.S.A., 313.
—, asthma and hay fever of, in relation to *Alternaria*, 254, 679, 799; *Aspergillus*, 254, 799; *Chaetomium*, 679, 799; *Cladosporium*, *C. fulvum*, and *C. herbarum*, 354; grain dusts and smuts, 737; *Helminthosporium*, 679; *Hormodendrum*, 254, 679, 799; moulds, 109; *Penicillium*, 799; *Phoma*, 254; *Tilletia caries*, *T. foetens*, and *Ustilago* spp., 679; *U. avenae*, *U. kolleri*, and *U. tritici*, 679, 737.
—, *Atelosaccharomyces hominis* on, in Europe, 29.
—, *Blastocystis gemmagina* and *B. hominis* on, in Germany, 676.
—, *Blastodendrion braulti* on, in Algeria, 178.
—, *Blastomycoides* on, in Japan, 310.
—, *Candida* on, in Panama Canal Zone, 179.
—, — *albicans* on, biochemical study on, 395; occurrence in Algeria, 178; in Argentine, 178; in France, 739; in Holland, 178; in Syria, 179; in U.S.A., 592, 738; taxonomy of, 738.
—, — *montpellieri* on, in Algeria, 178.
—, — *paratropicalis* on, in Algeria, 178.
—, — *pinoysimilis* on, in Italy, 313.
—, — *stellatoidea* on, in Norway, 592.
—, — *tropicalis* on, dissociation in, 108.
—, *Cephalosporium* on, in Germany, 180.
—, — *keratoplasticum* on, in Japan, 524.
—, *Cladosporium wernecki* on, in Cuba, 593.
—, *Coccidioides immitis* on, control, 800; diagnosis of, 527; occurrence in the Argentine, 800; in Europe, 29; in N. and S. America, 29; in U.S.A., 179, 180, 394, 594, 800; review of literature on, 594.
—, *Corethropsis hominis* on, in the British Navy, 677.
—, *Cryptococcus haematicon* on, in the Argentine, 594.
—, — *haematophilus* on, in the Argentine, 594.
—, — *hominis* on, in Europe, 29.
—, *Ctenomyces bossae* on, in Yugoslavia, 456.
—, *Debaryomyces neoformans* on, effect of temperature on, 676; note on, 456; occurrence in the Argentine, 800; in Belgium and England, 456; in Europe, 29; in Germany, 456; in U.S.A., 396, 592, 676; study on, 592.
—, dermatomycosis in, 392.
—, *Endodermophyton* on, Gram reaction of, 523.
—, *Endomyces albicans* on, in Italy, 253.
—, — *capsulatus* and its var. *isabellinus* on, in N. America, 29.
—, — *dermatitidis* on, assimilation of glucose by, 179; occurrence in the Argentine, 800; in N. America, 29; in U.S.A., 253; variation in, 677.
[Man], *Epidermophyton* on, Gram reaction of, 523; occurrence in the Argentine, 178.
—, — *floccosum* on, elimination of bacteria from cultures of, 110; occurrence in the British Navy, 677; in China, 110, 523; in Europe, 678.
—, — *gypseum flavum* on, in Hungary, 311.
—, — *luteum* on, in Hungary, 311.
—, — *sulfureum* on, in Hungary, 312.
—, *Eutorula excorians* on, comparison of, with *E. bernasconi*, 176.
—, *Favotrichophyton decipiens* on, in Java, 27.
—, *Geotrichum matalense* on, in Italy, 28.
—, *Glenospora clapieri* on, in Algeria, 178.
—, hay fever of, see under asthma and hay fever of.
—, *Histoplasma capsulatum* on, status of, 457.
—, *Hormodendrum* on, in the Argentine, 800.
—, — *pedrosoi* on, Gram reaction of, 523; occurrence in Algeria, 178; in Brazil, 28.
—, — *rossicum* on, in U.S.S.R., 109.
—, *Indiella mansoni* on, in Hungary, 111.
—, *Madurella* (?) *americana* on, in Sumatra, 455.
—, — *mycetomi* on, in Algeria, 178.
—, *Malassezia furfur* on, in Italy, 311.
—, *Microsporon* on, Gram reaction of, 523.
—, — *audouini* on, note on, 456; occurrence in Africa, 522; in Algeria, 177; in Yugoslavia, 455.
—, — *felineum* on, in Algeria, 177.
—, — *ferrugineum* on, elimination of bacteria in cultures of, 110; occurrence in China, 110, 523; in French Indo-China, 522; (?) in India, 595.
—, — *fulvum* on, Gram reaction of, 523.
—, — *lanosum* on, in Canada, 393.
—, — *obesum* and *M. tardum* on, in Africa, 522.
—, *Mucor* on, 179.
—, *Mycotorula krusoides* on, *Monilia krusoides* renamed, 108; occurrence in Italy, 108.
—, — *mucinosa* on, (?) identical with *Parendomyces albus*, 524; occurrence in Italy, 524.
—, — *zeylanoides* on, in Italy, 524.
—, *Mycotoruloides unguis* on, in Java, 27.
—, *Paracoccidioides brasiliensis* on, in the Argentine, 800; in S. America, 29; in Uruguay, 252.
—, — *cerebriformis* on, in the Argentine, 800; in U.S.A., 29.
—, — *tenuis* on, in U.S.A., 29.
—, *Penicillium* on, 179.
—, *Phialophora* on, in the Argentine, 800.
—, — *verrucosa* on, in Brazil, 28.
—, *Piedraia hortai* on, in the Argentine, Brazil, and Colombia, 526; in French

Indo-China, 800; in Venezuela, 526; study on, 800.
—, — *javanica* on, in Java, 27.
[Man], *Pityrosporum malassezi* on, in the Philippines, 110.
—, — *ovale* on, in U.S.A., 394.
—, *Proteomyces variabilis* on, in Java, 27.
—, rhinitis of, moulds in relation to, in England, Germany, and U.S.A., 109.
—, *Rhinosporidium seeberi* on, in the Argentine, 800; in India, 454; in Iran, 593; (?) in S. Africa, 29; in U.S.A., 454; in U.S.S.R., 593.
—, *Scedosporium apiospermum* on, in Algeria, 178.
—, *Scopulariopsis blochi* on, in Japan, new variety of, 252.
—, *Sporotrichum* on, Gram reaction of, 523.
—, — *beurmanni* on, in Algeria, 178.
—, — *gougeroti* on, in Brazil, 595.
—, *Torulopsis minor* on, in Italy, 524.
—, (?) toxicity of *Sorosporium reilianum* and *Ustilago zeae* to, 111.
—, *Trichophyton* on, ecto-endothrix type of, 523; Gram reaction of, 523; occurrence in China, 523; in the Argentine, 178; survey of, 177.
—, — *acuminatum* on, in Algeria, 177.
—, — *album* on, in Yugoslavia, 456.
—, — *cerebriforme* on, in Algeria, 177; in China, 523.
—, — *concentricum* on, in China, 523; in French Indo-China, 678; (?) in Japan, 524.
—, — *crateriforme* on, in Algeria, 177.
—, — *fumatum* on, in Algeria, 177; in Madagascar, 522.
—, — *glabrum* on, in Algeria, 177; in China, 523; in Yugoslavia, 456; systematic position of, 27.
—, — *gourvili* on, in French Equatorial and West Africa, 522.
—, — *gypseum* on, in the British Navy, 677.
—, — *immergens* on, in Yugoslavia, 456.
—, — *interdigitale* on, in the British Navy, 677; in Java, 27; regarded as a form of *T. gypseum*, 313; synonym of, 313.
—, — *langeroni* on, in Yugoslavia, 456.
—, — *luxurians* on, in Algeria, 178.
—, — *mentagrophytes* on, biochemical study on, 522; effect of ultra-violet rays on, 737; occurrence in Algeria, 178; in Japan, 522; in U.S.A., 737; in Yugoslavia, 456.
—, — *ochraceum* on, in Java, 27.
—, — *pervesi* on, in Algeria, 177.
—, — *plicatile* on, in Algeria, 177; in Java, 27.
—, — *polygonum* on, in Algeria, 177.
—, — *radiolatum* on, in Yugoslavia, 456.
—, — *regulare* on, in Algeria, 177.
—, — *rubrum* on, elimination of bacteria in cultures of, 110; occurrence in Europe, 678; in French Indo-China, 522, 678; in Java, 27.
—, — *singulare* on, in U.S.A., 312; renamed *Favotrichophyton album* var. *singulare*, 312.
[Man, *Trichophyton*] *soudanense* on, in Algeria, 177; in French Equatorial and West Africa, 522.
—, — *sulphureum* on, in Algeria, 177; in Pondicherry, 522.
—, — *umbilicatum* on, in Algeria, 177.
—, — *violaceum* on, in Algeria, 177; in China, 110, 523; in French Equatorial and West Africa and Pondicherry, 522; in U.S.S.R., 110; in Yugoslavia, 456; prevention of contamination in cultures of, 110; systematic position of, 27.
—, *Trichosporon* on, Gram reaction of, 523.
—, — *giganteum* and *T. humahuaquensis* on, in the Argentine, Brazil, Colombia, and Venezuela, 526.
—, — *proteoliticum* on, in the Argentine, 527.
Mandarin orange, see Orange.
Manganese arsenate, use of, as a timber preservative, 220.
— deficiency in citrus in U.S.A., 518, 672.
— — in maize in Germany, 307.
— — in potato in England, 295.
— — in relation to 'speckled yellows' of beet and mangold, 226; to sugar-cane mosaic, 623.
— — of crops in Western Australia, 547.
— —, see also Grey speck disease and Peas, marsh spot of.
— sulphate, effect of, on oats and potato crops, 547; on *Phymatotrichum omnivorum*, 176.
— —, use of, against citrus mottle leaf, 104; against grey speck of oats, 668; against manganese deficiency of citrus, 673; against marsh spot of peas, 79; against reclamation disease, 163; against 'speckled yellows' of beet and mangold, 226.
—, toxicity of, to cotton, 23.
Mango (*Mangifera indica*), *Aspergillus niger* on, in Trinidad, 193.
—, *Colletotrichum gloeosporioides* on, see *Glomerella cingulata* on.
—, *Curvularia lunata* on, in Trinidad, 193.
—, *Diaporthe citri* on, in Trinidad, 193.
—, *Dimerosporium mangiferum* on, in India, 501.
—, *Glomerella cingulata* on, in India, 750; in Trinidad, 193.
—, *Guignardia* on, in Trinidad, 193.
—, necrosis of, in India, 329.
—, *Pestalozzia leprogena* on, in Trinidad, 193.
—, 'taper tip' of, in India, 330.
Mangold (*Beta vulgaris*), crackly yellows of, in England, 227.
—, *Helicobasidium purpureum* on, in England, 654; wild hosts of, 654.
—, reclamation disease of, in Germany, 667.
—, 'speckled yellows' of, manganese deficiency in relation to, 226; occurrence in England, 226.
—, see also Beet.
Mangosteen (*Garcinia mangostana*), *Diplodia natalensis*, *Pestalozzia*, and *Phomopsis* on, in Burma, 156.

[Mangosteen], physiological disease of, in Ceylon, 655.
Manihot glaziovii, *Asterina manihotis* on, in Sierra Leone, 820.
— *utilissima*, see Cassava.
Manila hemp, see *Musa textilis*.
Maple, see *Acer*.
Marasmius on sugar-cane in Egypt, 625; in the Philippines, 626.
— *perniciosus* on cacao, legislation against, in St. Lucia, 768.
— *pyrinus* on apple in U.S.A., 461.
— *sacchari* on sugar-cane in Brazil, 624; in Egypt, 625.
— *stenophyllus* on banana in Haiti, 328.
— — on *Musa textilis* in Malaya, 505.
Maravalia crotalariae on *Crotalaria* in Malaya, 505.
— *hyalospora* on *Acacia confusa* in Japan, 489.
Margarinomyces, emended diagnosis of the genus, 315.
— *fasciculatus* and *M. hoffmannii* on butter in Switzerland, 315.
— *luteo-viridis* on butter in Czechoslovakia and Switzerland, 315.
Marigold, see *Calendula officinalis*.
Marrow, see Vegetable marrow.
Marssonina medicaginis synonym of *Stagonospora meliloti*, 320.
— *panattoniana* on *Crepis capillaris* and lettuce in England, 569.
— *populi* on poplar in Holland, 154; *Pseudopeziza populorum* perithecial stage of, 154.
— *salicicola* on *Salix babylonica* in Holland, 154.
Martynia lutea, *Cercospora decolor* var. *macrospora* on, in Italy, 114.
Mastigosporium, amendment of the genus, 34.
— *album* on *Alopecurus pratensis* and *Deschampsia caespitosa* in Europe, 34.
— — var. *anthrix* renamed *Septogloeum anthrix*, 34.
— — var. *calvum* renamed *M. calvum*, 34.
— — var. *muticum* synonym of *M. calvum*, 34.
— *calvum* on *Agrostis*, *Calamagrostis*, and *Dactylis glomerata* in U.S.A., 34.
— — on grasses in Europe and U.S.A., 34; synonymy of, 34.
Matthiola bicornis, *M. incana* var. *annua* mosaic can infect, 459.
— —, radish mosaic can infect, 427.
— *incana*, *Alternaria cheiranthi* on, in Denmark, 596.
— —, *Verticillium* can infect, 783.
— — var. *annua*, bacterial disease of, in New S. Wales, 256; in U.S.A., 257.
— — — — mosaic, host range of, 459; occurrence in U.S.A., 459; transmission of, by *Lipaphis pseudobrassicae*, 459.
— — — —, *Pseudomonas campestris* on, in New S. Wales, 398.
— — — —, *Pseudomonas syringae* can infect, 257.
— — — —, resistance to radish mosaic, 427.
— — — —, turnip mosaic can infect, 223.
Meat, moulds on, in U.S.A., 255.
Meconopsis bailеyi, *Bacterium papavericola* on, in Canada, 726.
Medicago hispida, *Peronospora savulescui* on, in Palestine, 275.
— *lupulina*, *Sclerotinia trifoliorum* on, in Sweden, 299.
— *maculata*, *Uromyces anthyllidis* f. *medicaginis* on, in France, 549.
— *sativa*, see Lucerne.
Medlar (*Mespilus germanica*), *Fabraea maculata* on, in England, 261.
—, *Sclerotinia fructigena* on, in England, 654.
—, — *mespili* on, in Bulgaria, 189.
Megalonectria pseudotrichia on tea in India, 822; *Stilbum cinnabarinum* conidial form of, 822.
Melampsora on poplar in U.S.A., 128.
— *bigelowii* on *Salix* in Alaska, 642.
— *farlowii* on *Tsuga canadensis* and *T. caroliniana* in Canada and U.S.A., 719.
— *lini* on flax, breeding against, 268; occurrence in Germany, 509, 679; in Holland, 268, 679; in Sweden, 679; physiologic races of, 509, 679; serological study on, 127; varietal reaction to, 127, 268, 509, 679.
— *salicis-wallichianae* on *Salix wallichiana* in India, 59.
Melanconium betulinum, effect of growth substances on, 336.
— *fructicolum* on pomegranate in Ceylon, 655.
Melanomma panici-miliacei on *Panicum miliaceum* in U.S.S.R., 589.
Melanoporthe, diagnosis of, 414.
Melia azedarach, *Cercoseptoria domingensis* on, in the Dominican Republic, 58.
Melilotus, *Ascochyta caulicola* on, in Germany and U.S.A., 35.
—, *Mycosphaerella lethalis* on, in U.S.A., 35.
—, *Stagonospora meliloti* can infect, 320.
— *alba*, boron deficiency in, in U.S.A., 77.
— —, broad bean mosaic can infect, 649.
— — mosaic in China, 608.
— —, *Rhizoctonia* on, in U.S.A., 77.
Meliola, sub-division of, 58.
— *arundinis* on sugar-cane in the Philippines, 625.
Melolontha, see Cockchafer.
Melon (*Cucumis melo*), effect of Bordeaux mixture on, 695.
—, *Diplodina citrullina* on, in Bulgaria, 413.
—, *Erysiphe cichoracearum* on, in U.S.A., 85.
—, *Pythium aphanidermatum* on, in U.S.A., 781.
—, see also Cantaloupe.
Mentha arvensis, *Helicobasidium purpureum* on, in England, 654.
Meranin, use of, for clover seed disinfection, 115.
Mercurial dusts, use of, against *Bacterium malvacearum* on cotton, 573.
Mercuric chloride, effect of, on *Phymatotrichum omnivorum*, 176.

[Mercuric chloride], use of, against *Actinomyces scabies* on potato, 135; against *Aplanobacter michiganense* on tomato, 234; against *Bacterium marginatum*, 113; against *Bact. medicaginis* var. *phaseolicola* on bean, 366; against *Bact. tumefaciens* on apple and pear, 161; against (?) *Bact. vesicatorium* on tomato, 717; against citrus albinism, 247; against *Colletotrichum lagenarium* on cucurbits, 368; against *Corticium solani* on potato, 135, 577; against damping-off, 333; against *Fusarium conglutinans* var. *callistephi* on China aster, 234; against *Macrophomina phaseoli* on *Phaseolus lunatus*, 82; against *Penicillium* on peas, 495; against *Plasmodiophora brassicae* on cabbage, 508; against *Pseudomonas campestris* on kale, 565; on *Matthiola incana* var. *annua*, 398; against *Pullularia pullulans* on peas, 495; against *Rhizopus nigricans* on peas, 495; against *Septoria apiigraveolentis* on celery, 291; as a timber preservative, 426, 830.
— —, oxide, use of, against *Actinomyces scabies*, 612; on potato, 135; against *Corticium solani* on potato, 135, 578.
Mercurous chloride, use of, against *Actinomyces scabies* on potato, 612; against *Bacterium marginatum*, 114.
Mercury compounds, organic, effect of, on seed germination, 93, 228, 239.
— —, —, use of, against damping-off of beet, 566; against *Fusarium coeruleum* on potato, 409; as seed disinfectants, 93.
— preparations P1 and P2, use of, against *Actinomyces scabies* and *Corticium solani* on potato, 545.
Merulius lacrymans on timber, 563; control, 220, 644, 720; effect of sap stain on resistance to, 829; factors affecting, 360; occurrence in Great Britain, 362; in Sweden, 220; in U.S.S.R., 720; production of oxalic acid by, 426; specific reaction to, 221; study on, 221; X-ray study on, 563.
— —, toxicity of hydrogen sulphide to, 644.
Mespilus germanica, see Medlar.
Métalnikov's bacillus, use of, against insects, 379.
Metarrhizium anisopliae, penetration of chitin by, 380.
— —, antagonism of, to *Ustilago zeae*, 380.
Metbor, use of, against *Penicillium digitatum* and *P. italicum* on citrus, 247.
Methyl mercury chloride injury, 654.
— — nitrate injury, 654.
Methylated spirit, see Alcohol.
Metrox, use of, against damping-off of tomato, 421.
Microdiplodia capsici on chilli in Greece, 11.
Micromonospora on manure in U.S.A., 342.
Micro-organisms and fermentation, textbook on, 809.
Microsphaera, host range of, 58.
— *alni* on privet in Canada, 726.
— — var. *vaccinii* on *Vaccinium* in U.S.A., 694.
— *polonica* on hydrangea in Italy, 458.
Microsporon on man, Gram reaction of, 523.
—, study on, 177.
— *audouini*, new culture medium for, 178.
— — on man in Africa, 522; in Algeria, 177; in Yugoslavia, 455.
— *canis*, cultural study on, 393.
— *felineum*, new culture medium for, 178.
— — on man in Algeria, 177.
— *ferrugineum* on man, elimination of bacteria from cultures of, 110; occurrence in China, 110, 523; in French Indo-China, 522; (?) in India, 595.
— *fulvum* on man, Gram reaction of, 523.
— *lanosum* on the dog in Czechoslovakia, 455.
— — on man in Canada, 393.
— *obesum* and *M. tardum* on man in Africa, 522.
Microxyphium and *M. leptospermi*, study on, in Australia, 627.
Mil-du-spra, use of, against *Oidium tingitaninum* on citrus, 795.
Milk as an adhesive, 260, 785.
Mint, see *Mentha*.
Mites in relation to tobacco leaf curl in Japan, 479.
Mitrula sclerotiorum parasitizing *Sclerotinia trifoliorum*, 299.
Monilia on cherry, see *Sclerotinia* on.
— *krusoides* renamed *Mycotorula krusoides*, 108.
— *macedoniensis* referred to *Saccharomyces macedoniensis*, 525.
— *nigra* on food in U.S.S.R., 468.
Moniliopsis aderholdi on cabbage in Germany, 720.
Monkey, (?) *Blastocystis gemmagina* and *B. hominis* on the, in Germany, 676.
—, *Trichophyton sulphureum* can infect the, 523.
Mortierella pusilla and *M. tuberosa* in soil in Scotland, 137.
Morus, see Mulberry.
Mosaic diseases, see under hosts.
Moulds, factors affecting growth of, 610.
— on buildings causing decay, 333.
— on cellulose pulp, 773.
— on cotton fabrics, 726.
— on eggs in Queensland, 503.
— on food in New Zealand, 460; in U.S.S.R., 467; in Victoria, 461.
— on man in relation to asthma, hay fever, and rhinitis, 109.
— on meat in U.S.A., 255.
— on oil palm kernels, 503.
— on prepared rubber in Malaya, 272.
Mouse, *Debaryomyces neoformans* can infect the, 676.
Mucor, *Festuca duriuscula* germination stimulated by, 47.
—, longevity of species of, 703.
— on butter in U.S.A., 595.

[*Mucor*] on cereals, control, 93.
— on clover in U.S.S.R., 115.
— on food in U.S.S.R., 468.
— on man, 179.
— on oil palm in Malaya, 503.
— *albo-ater* in soil, *Piptocephalis cylindrospora* parasitizing, in Scotland, 137.
— *circinelloides*, *M. fragilis*, *M. hiemalis*, *M. microsporus*, *M. mucedo*, and *M. racemosus* in soil in Scotland, 137.
— *ramannianus*, effect of secretions of, on spruce, 608.
— — in soil in Scotland, 137.
— —, symbiosis of *Rhodotorula rubra* and, 232.
— *saturninus*, *M. silvaticus*, *M. spinosus*, and *M. varians* in soil in Scotland, 137.
Mucorales, French translation of Naoumoff's key to, 478.
— in soil in Scotland, 137.
Mucuna, *Macrophomina phaseoli* on, in the Sudan, 392.
Muhlenbergia, *Puccinia schedonnardi* on, in U.S.A., 392.
Mulberry (*Morus*), *Bacterium mori* on, in U.S.A., 158.
—, dwarf disease of, due to a virus, in Japan, 719.
—, *Sclerotinia carunculoides* on, in U.S.A., 422.
Musa cavendishii, see Banana.
— *ensete*, (?) *Bacterium solanacearum* on, in Italian E. Africa, 693.
— *paradisiaca*, see Plantain.
— *sapientum*, see Banana.
— *textilis*, bunchy top of, in the Philippines, 256, 444.
— —, *Fusarium oxysporum* var. *cubense* on, in the Philippines, 30, 256.
— —, *Marasmius stenophyllus* on, in Malaya, 505.
— — mosaic in the Philippines, 255, 256, 396, 801; symptoms of, 801; transmission of, by aphids, 396; by *Aphis gossypii*, 396; (?) by *Pentalonia nigronervosa*, 255; to *Canna*, 397.
Muscari botryoides, *Ustilago vaillantii* on, in England, 724.
Mushrooms (*Psalliota* spp.), cultivation of, bulletin on, 151; calcium and phosphates in relation to, 229; on artificial composts, 8, 9; decomposition of compost for, by thermophilic fungi, 570; history of, 8; occurrence in Burma, 156; in England, 8, 151, 229; in France, 8; in Germany, 571, 652; in New S. Wales, 91; in U.S.A., 8, 442.
—, *Dactylium dendroides* on, in Germany, 779.
—, *Geomyces auratus* in compost for, in England, 295.
—, *Mycogone rosea* on, in England, 570.
—, *Oospora fimicola* on, in Denmark, 88.
—, *Pseudobalsamia microspora* in beds of, in England, 295.
—, monospore culture of, 723.
—, *Trichoderma viride* in compost for, in England, 295.
Muskmelon, see Melon.
Mustard (*Brassica alba* and *B. nigra*), bacteriorrhiza of, in U.S.S.R., 128.
—, *Cystopus candidus* f. *brassicae nigrae* on, in Palestine, 275.
—, lime-induced abnormalities of, in Switzerland, 29.
—, little leaf of, in U.S.A., 43.
—, *Matthiola incana* var. *annua* mosaic can infect, 459.
—, *Plasmodiophora brassicae* on, in Germany, 509.
—, potash deficiency in, in Germany, 54.
—, radish mosaic can infect, 427.
Mustard, Chinese (*Brassica juncea*), *Matthiola incana* var. *annua* mosaic can infect, 459.
—, —, radish mosaic can infect, 427.
Mustard oil, use of, against *Plasmodiophora brassicae* on cabbage, 508.
Mycelium radicis atrovirens and *M. radicis juniperi* on *Juniperus communis*, forming mycorrhiza, in Sweden, 700.
— — *nigrostrigosum*, effect of secretions of, on spruce, 608.
— — — on *Juniperus communis*, forming mycorrhiza, in Sweden, 701; *Coenococcum graniforme* (?) identical with, 701.
Mycocandida pinoysimilis var. *citelliana* identical with *Saccharomyces fragilis*, 525.
Mycogone rosea on mushrooms in England, 570.
Mycological terminology, Portuguese glossary of, 265.
Mycology, relation between field and laboratory work in, 479.
Mycorrhiza, effect of growth substances on fungi forming, 470, 542; of secretions of, on spruce in Sweden, 608.
— in relation to the growth of exotic trees, 406.
— of *Araucaria cunninghamii* in Nyasaland, 406.
— of *Arum maculatum* in France, 470.
— of birch in Sweden, 701.
— of *Casuarina equisetifolia* in India, 406.
— of clover in Italy, 471.
— of conifers, 541.
— of cotton, *Rhizophagus* forming, in Egypt and India, 796.
— of *Juniperus communis* in Sweden, 700.
— of legumes, *Rhizoctonia* forming, 471.
— of *Lotus corniculatus* in Italy, 471.
— of orchids, *Rhizoctonia* spp. forming, in Mexico and U.S.A., 801.
— of pine, *Boletus* spp. forming, 406, 502, 542; Gastero- and Hymenomycetes forming, 541; occurrence in Java and New Zealand, 406; in Northern and Southern Rhodesia and Nyasaland, 406; in Queensland, 502; in Sweden, 701; in U.S.A., 267; *Rhizopogon rubescens* and *Scleroderma bovista* forming, 406.
— of potato in France, 341.
— of *Salix repens* in Sweden, 701.
— of *Scilla bifolia*, 470.
— of *Solanum dulcamara*, 470.
— of *Solanum maglia* in S. America, 341.

[Mycorrhiza] of spruce, effect of secretions of, on host, 608; Hymeno- and Gasteromycetes forming, 541; occurrence in Sweden, 541, 608, 701.
— of *Veratrum album*, 470.
— of vetch in Italy, 470.
—, Phycomycetous fungi forming, 468.
—, physiological study on, in Germany, 541.
Mycosphaerella perfect stage of *Septoria musiva*, 771.
— *arachidicola*, see *Cercospora arachidicola*.
— *berkeleyii*, see *Cercospora personata*.
— *caricae* on papaw in Malaya, 505.
— *caryophyllata* on clove in Madagascar, 548.
— *fragariae* on strawberry in Canada, 191; in the Philippines, 444; in U.S.A., 402; varietal reaction to, 444.
— *fraxinicola* on ash in U.S.A., 638; *Phyllosticta viridis* imperfect stage of, 638.
— *grossulariae* on currants in Wales, 262.
— *hordei* on wheat in Germany, 140.
— *lethalis* on *Melilotus* in U.S.A., 35.
— *linicola* renamed *Sphaerella linicola*, 112.
— *maculiformis* on chestnut in Italy, 355.
— *opuntiae* on *Opuntia amophila* in U.S.A., 404.
— *pinodes* on peas in Germany, 831; in U.S.A., 237; overwintering of, 237.
— *rubi* on raspberry in the Argentine, 478.
— *sentina* on pear in Belgium, 820; renamed *Phaeosphaerella sentina*, 820.
— *spilota* on *Andropogon tectorum* in Sierra Leone, 820.
— *tinosporae* perfect stage of *Cercospora tinosporae*, 57.
Mycotorula krusoides on man in Italy, 108; *Monilia krusoides* renamed, 108.
— *mucinosa* on man and wood pulp, (?) identical with *Parendomyces albus*, 524; occurrence in Italy, 524.
— *zeylanoides* on man and wood pulp in Italy, 524.
Mycotoruloideae, taxonomy of, 525.
— distinct from Torulopsoideae, 253.
Mycotoruloides unguis on man in Java, 27.
Myelophilus, Ceratostomella pini associated with, in Poland, 488.
Myriangium haraeanum on bamboo in Japan, 204.
Myrica gale, Actinomyces in symbiosis with, in Germany, 335.
Myriogenospora aciculisporae on sugarcane in Brazil, 624.
Myristica fragrans, see Nutmeg.
Myrobalan, see *Prunus divaricata*.
Myrothecium roridum can infect *Viola*, 157.
— — on *Dolichos lablab* and *Hibiscus esculentus* in Sierra Leone, 157.
— — on pansy and *Viola* in England, 802.
Myxomycetes in India, 57.
Myxosporium conidial stage of *Neofabraea populi*, 828.
Myzus circumflexus transmitting celery mosaic, 370; potato crinkle mosaic, potato leaf roll, and potato mosaic, 50.
— *persicae*, inhibition of tobacco mosaic virus by juice of, 540.
— — transmitting beet yellows, 429; celery mosaic, 370; cucumber virus 1 on lupin, 803; lettuce mosaic, 650; passion fruit woodiness, 749; potato crinkle mosaic, 50; potato leaf roll, 50, 131, 133, 578; potato mosaic, 50; potato streak, 133; potato virus A, 133; potato virus diseases, 132, 133, 197; potato virus Y, 131, 233, 473; tobacco pox, 554; tobacco rosette, (?) 278, 347; turnip mosaic, 223; virus diseases in Germany, 197.
— *pseudosolani* transmitting cucumber virus 1, 803; potato crinkle mosaic, 50; potato leaf roll and potato mosaic, 50.

Naemosphaera rostellata on pine in Holland, 358.
Naphtha flakes, use of, against *Corticium solani* on potato, 578.
Naphthalene, effect of, on growth of *Botrytis tulipae*, 31.
Naphthol β, use of, as a timber preservative, 563.
Narcissus, Fusarium bulbigenum on, in Bulgaria, 413; in England, 653.
— mosaic, geographical distribution of, 680; occurrence in U.S.A., 680.
—, *Ramularia vallisumbrosae* on, in England, 598; synonymy of, 598.
—, *Sclerotinia polyblastis* on, in England, 32; perfect stage of *Botrytis polyblastis*, 32.
—, *Sclerotium delphinii* can infect, 183.
—, *Trichoderma viride* on, in England, 653.
Nasturtium, see *Tropaeolum majus*.
Naucoria, key for species of, 511.
— *cerealis* on barley in U.S.A., 164.
— — on cereals in U.S.A., 511.
— — on rye and wheat in U.S.A., 164.
Nectarine (*Prunus persica*), *Puccinia pruni-spinosae* on, in Australia, 190.
—, *Sclerotinia fructicola* and *S. laxa* on, in U.S.A., 533.
Nectria can infect *Acer rubrum*, 559.
— on forest trees in N. America, 827.
— on orange in Java and Malaya, 504.
— on poplar in France, 68.
— on shade trees in U.S.A., 354.
— *cinnabarina* on *Ribes* in France, 325.
— *coccinea*, effect of growth substances on, 336.
— — on poplar in Holland, 68.
— — on trees, host range of, in U.S.A., 280, 558.
— *flavolanata* on tangerine in Sierra Leone, 156.
galligena on apple in England, 743.
— — on ash in England, 825.
— — on poplar in Holland, 68.
(?) — var. *major* on ash in England, 825.
— *haematococca* on tangerine in Dutch E. Indies, 795.
— *subquaternata* on tea in India, 822.

Nematodes, *Arthrobotrys oligospora* on, 675.
—, *Dactylella bembicodes* on, 675, 676.
—, — *ellipsospora* on, 676.
—, fungi destroying, 232.
—, *Harposporium anguillulae* on, in U.S.A., 107; *Polyrhina multiformis* synonym of, 107.
Nematospora on *Acacia* in Tanganyika, 574.
— *coryli*, host range of, 309.
— — on citrus in Dutch E. Indies, 794; transmission of, by bugs, 794; to *Cyphomandra betacea* and tomato, 796.
— — on cotton, note on, 308; occurrence in the Belgian Congo, 248, 797; in Tanganyika, 574; varietal reaction to, 797.
— *gossypii*, effect of growth substances on, 336.
— —, host range of, 309.
— — on cotton, note on, 308; occurrence in the Belgian Congo, 248, 797; in Tanganyika, 574; varietal reaction to, 797.
— —, use of, for estimating biotin, 542.
— *nagpuri* on cotton, 308; in India, 309.
(?) *Neocosmospora vasinfecta* on cotton in the Belgian Congo, 248.
Neofabraea malicorticis on apple in U.S.A., 532.
— — synonym of *Pezicula malicorticis*, 762.
— *populi* on poplar, *Myxosporium* conidial stage of, 828; occurrence in Canada, 828.
Nephelium lappaceum, *Oidium* on, in Malaya, 504.
— *litchi*, *Pestalozzia* on, in S. Africa, 438.
Nephotettix apicalis var. *cincticeps*, retention of rice dwarf virus by, 613.
Newts, Saprolegniaceae on, in U.S.A., 799.
Nicandra physaloides, tobacco rosette affecting, in Southern Rhodesia, 347.
Nickel, effect of, on *Tilletia caries* on wheat, 167.
— chloride, effect of, on rosette-forming disorder of pine, 643.
— —, use of, against citrus albinism, 247.
Nicotiana alata, *Petunia* mosaic can infect, 458.
— *glauca*, potato yellow dwarf can infect, 270.
— *glutinosa*, *Bacterium fascians* can infect, 597.
— —, potato virus X affecting, X-bodies in, 378.
— —, potato yellow dwarf can infect, 270.
— —, radish mosaic can infect, 427.
— —, tobacco necrosis can infect, 211.
— —, use of, to differentiate potato viruses A and Y, 472.
— *langsdorffii*, potato yellow dwarf can infect, 270.
— —, radish mosaic can infect, 427.
— *paniculata*, potato yellow dwarf can infect, 270.
[*Nicotiana*] *rustica*, potato yellow dwarf can infect, 270.
— —, tobacco necrosis can infect, 211.
— — var. *humilis*, radish mosaic can infect, 427.
— *sanderae*, *Petunia* mosaic can infect, 458.
— —, potato yellow dwarf can infect, 270.
— *sylvestris*, potato yellow dwarf can infect, 270.
— *tabacum*, see Tobacco.
— virus 1, see Tobacco virus 1.
— virus 6, study on protein of, 480.
Nicotine, use of, against potato virus diseases, 472.
Nigrospora on barley, seed tests for, in U.S.A., 93.
— on maize in U.S.A., 93, 244, 734; seed tests for, 93.
— on rice in U.S.A., 546.
— on wheat, seed tests for, in U.S.A., 93.
— *oryzae* on maize in U.S.A., 18.
— — on rice in India, 88.
— *sphaerica* on banana in New S. Wales, 327.
— — on maize in U.S.A., 18, 669.
Nitrogen deficiency in coffee, 21.
— — in relation to crackly yellows of beet and mangold, 227; to tomato mosaic, 715; to *Urocystis tritici* on wheat, 791.
—, see also Fertilizers.
Nitronaphthalene *a*, use of, as a timber preservative, 563.
Nivarsin, use of, for clover seed disinfection, 115.
Nomina generica conservanda, British proposals regarding, 755.
Norta altissima, beet curly top affecting, in U.S.A., 225.
Nosperit, use of, against *Ceratophorum albizziae* on *Albizzia falcata* and *A. sumatrana*, 282.
Nothofagus, *Phytophthora cambivora* on, susceptibility to, 826.
Nummularia atropunctata on timber in U.S.A., 356.
Nutmeg (*Myristica fragrans*), *Coryneum* (?) *myristicae* on, in Malaya, 505.

Oak (*Quercus*), *Ceratostomella piceae* on, in Poland, 488.
—, frost canker of, in Holland, 74.
—, *Ganoderma resinaceum* on, in Austria, 215.
—, *Gnomonia veneta* on, in U.S.A., 354.
— 'goitre' in Germany, 487.
—, *Lentinus tigrinus* on, in Yugoslavia, 559.
—, *Nectria coccinea* on, in U.S.A., 280.
—, *Pezicula cinnamomea* on, in Germany, 762.
—, *Phytophthora cambivora* on, susceptibility to, 826.
—, *Polyporus dryadeus* on, in Austria, 215.
—, — *litschaueri* on, in U.S.S.R., 356.
—, — *schweinitzii* on, in Norway, 559.
—, *Poria andersonii* on, in U.S.A., 487.
—, *Stereum gausapatum* on, in U.S.A., 718.

[Oak], *Strumella corynoidea* on, in U.S.A., 280.
—, *Ustulina vulgaris* can infect, 356.
Oats (*Avena*), bacteriorrhiza of, in U.S.S.R., 128.
—, *Bacterium coronafaciens* on, in New Zealand, 235, 389.
—, — *striaefaciens* on, in U.S.S.R., 379.
—, *Botrytis cinerea* on, in Canada, 725.
—, *Cercosporella herpotrichoides* on, in England, 448.
—, copper deficiency in, in Western Australia, 547.
—, *Dictyosporium opacum* on, in England, 295.
—, *Dilophospora alopecuri* on, in Germany, 586.
—, *Fusarium culmorum* on, in France, 372.
—, grey speck of, in Denmark, 668.
—, *Helminthosporium gramineum* on, in Italy, 580.
—, magnesium deficiency in, in Holland, 240.
—, mosaic of, in U.S.S.R., 297, 666; transmission of, by *Delphax striatella*, 297; to barley and *Panicum miliaceum*, 297.
—, physiological disease of, in Germany, 99.
—, *Puccinia coronata* on, breeding against, 99, 239, 242, 447; *Darluca filum* can infect, 581; factors affecting, 306, 447, 793; infection period of, 389; longevity of uredospores of, 306; occurrence in Australia, 239; in Canada, 724; in U.S.A., 99, 157, 242, 793; in U.S.S.R., 389, 447; overwintering of, 447; physiologic races of, 239, 242, 794; *Rhamnus cathartica* in relation to outbreaks of, 724; varietal reaction to, 99, 157, 242, 447, 794.
—, — *graminis* on, breeding against, 99; effect of light on, 793; occurrence in Denmark, 88; in Germany, 383, 730; in New S. Wales, 656; in U.S.A., 99; physiologic races of, 730; varietal reaction to, 99, 656.
—, — *lolii*, see *P. coronata*.
—, 'pupation' disease of, see mosaic of.
—, *Pythium* on, in U.S.A., 158.
—, — *de Baryanum* and *P. irregulare* can infect, 158.
—, reclamation disease of, control, 613, 667; occurrence in Germany, 667; in Holland, 240, 241, 613; in S. Australia, 163.
—, *Sclerotium rolfsii* on, in U.S.A., 79.
—, *Ustilago avenae* on, breeding against, 99, 242, 588, 668; control, 17, 243, 605; factors affecting, 243, 610; in relation to asthma and hay fever of man, 679, 737; methods for inoculation of, 172; occurrence in Finland, 668; in France, 17, 304; in Germany, 303, 669; in U.S.A., 11, 15, 16, 99, 242, 243, 441, 587; in U.S.S.R., 605; physiologic races of, 15, 304, 441; serological diagnosis of, 162; study on, 16; varietal reaction to, 16, 99, 242, 303, 304, 587, 668, 669; vernalization in relation to, 243.
—, — *kolleri* on, breeding against, 99, 242, 588; factors affecting, 243; in relation to asthma and hay fever of man, 679, 737; methods for inoculation of, 172; occurrence in India, 585; in U.S.A., 11, 16, 99, 242, 243, 441, 587, 665; physiologic races of, 16, 441; study on, 16; varietal reaction to, 99, 242, 587; vernalization in relation to, 243; viability of, 585.
'Ob 72', see Pomarsol.
Ocellaria ocellata, emended description of, 762.
Oidiopsis on eggplant and tomato in Burma, 156.
— *taurica* on *Ampelopsis*, *Asclepias*, chilli, *Cynara cardunculus*, and *C. scolymus* in French Morocco, 83.
— — on eggplant in French Morocco, 83; in Madagascar, 11.
— — on *Oxalis*, tomato, and *Tropaeolum majus* in French Morocco, 83.
—, see also *Leveillula*.
Oidium on *Nephelium lappaceum* in Malaya, 504.
— on *Piper betle* in Burma, 156; (?) in India, 437.
— *begoniae* on *Begonia* in England, 724; in Portugal, 711.
— *caricae* on papaw in Bermuda, 506; (?) in U.S.A., 712.
— *euonymi-japonici* on *Euonymus japonicus* in U.S.A., 465.
— *heveae* on *Hevea* rubber, control, 729, 816; factors affecting, 272, 816; occurrence in Ceylon, 816; in India, 500, 823; in Malaya, 272, 816; in Sumatra, 729.
— *tingitaninum* on citrus in Dutch E. Indies, 794.
Oil, anthracene, use of, against *Coniophora puteana* and *Merulius lacrymans* on timber, 720.
—, diesel, use of, for *Ribes* eradication, 359.
— spray, use of, against *Elsinoe fawcetti* on citrus, 308; against orange water spot, 19.
—, see also Coco-nut oil, Linseed oil, Palm oil.
Oiled wrappers, use of, against apple scald in U.S.A., 443; against superficial scald of apple, 235.
Oils, use of, for apple preservation, 533.
—, vegetable, as spreaders, 89.
Oil palm (*Elaeis guineensis*), *Aspergillus* on, in Malaya, 503.
— —, *Balladynella palmicola* on, in Sierra Leone, 820.
— —, crown rot of, in Sumatra, 579.
— —, *Fusarium* on, in Malaya, 503.
— —, *Helminthosporium* on, in Malaya, 503.
— —, *Mucor* on, in Malaya, 503.
— —, *Pestalozzia palmarum* on, in Malaya, 503.
— —, (?) Polypore on, in Malaya, 503.
— —, *Trichoderma* on, in Malaya, 503.
Olea hochstetteri, resistance of, to dry rot, 76.
Olive (*Olea europea*), *Cercospora cladosporioides* on, in Italy, 604.
— dry rot in U.S.A., 330.

[Olive], fluorine injury to, in Italy, 466.
—, *Macrophoma dalmatica* on, in Greece, 10.
—, *Pseudomonas fraxini* can infect, 825.
—, — *savastanoi* on, in Portugal, 825; in U.S.A., 262, 330.
—, *Septoriella oleae* on, in Greece, 10.
— soft rot in U.S.A., 330.
—, suspected virus disease of, in Italy, 537.
Olpidiaster radicis synonym of *Olpidium brassicae*, 821.
Olpidium borzii synonym of *O. brassicae*, 821.
— *brassicae* on *Agrostis* in Wales, 821.
— — on cabbage in England, 821; in Germany, 720.
— — on cauliflower in Wales, 821.
— — on tobacco in Hungary, 139; (?) in Italy, 483.
— —, synonymy of, 821.
— *radicicolum* synonym of *O. brassicae*, 821.
Omphalia flavida on coffee, host range of, 589; occurrence in Costa Rica, 589.
Onion (*Allium cepa*), *Aspergillus niger* on, in New S. Wales, 501.
—, *Bacterium croci* on, in U.S.S.R., 378.
—, *Botrytis* on, in Japan, 430.
—, — *allii* on, in New Zealand, 726; in U.S.A., 431.
—, — *byssoidea* on, in Japan, 430.
—, — *cinerea* on, in U.S.A., 430.
—, — *squamosa* on, in Japan, 430.
—, *Colletotrichum circinans* on, in New S. Wales, 501.
—, *Fusarium* on, in Victoria, 7.
—, *Peronospora schleideniana* on, in Eire, 778; in U.S.A., 728.
—, *Puccinia allii* on, in Palestine, 204.
—, *Pythium ultimum* can infect, 497.
—, *Sclerotium cepivorum* on, in England, 779; in New S. Wales, 82.
—, *Urocystis cepulae* on, in New Zealand, 82; in U.S.A., 367.
— yellow dwarf, legislation against, in New Zealand, 704; occurrence (?) in Germany, 197; in New Zealand, 726; transmission of, by *Brevicoryne brassicae*, 197.
Onobrychis viciaefolia, see Sainfoin.
Oospora citri-aurantii, effect of *Penicillium digitatum* on growth of, 390.
— — on citrus in Dutch E. Indies, 794; transmission of, by *Othreis fullonia*, 796.
— *fimicola* on mushrooms in Denmark, 88.
— *lactis*, humidity in relation to, 610.
— — on butter in U.S.A., 595.
— *pustulans* on potato in Norway, 412.
Oosporidium synonym of *Trichosporon*, 525.
Ophiobolus graminis on barley in Denmark, 385.
— — on cereals, recent research on, 386, 660.
— — on rye in Denmark, 385.
— — on wheat, antagonism of soil micro-organisms to, 664, 733; control, 385, 586; factors affecting, 98, 241; infection by ascospores of, 386; notes on, 656, 809; occurrence in Australia, 656; in Canada, 515, 733; in Denmark, 385; in England, 664; in France, 372; in Germany, 98; in Holland, 241; in U.S.A., 585; pathogenicity of, 792; root development in relation to, 515; study on, 585; viability of, 172.
[*Ophiobolus*] *halimus* on *Zostera marina* in British waters, 334.
— *heterostrophus* on maize, *Helminthosporium maydis* imperfect stage of, 245; occurrence in Germany, 245; in the Philippines, 444.
— *miyabeanus* on rice in Burma, 155; in Colombia, 12; in Japan, 272; in U.S.A., 546.
Ophiostoma minutum associated with *Ips* in Poland, 488.
— *penicillatum*, *Ceratostomella penicillata* renamed, 488.
— *polonicum* associated with *Ips* in Poland, 488.
—, see also *Ceratostomella*.
Opium poppy (*Papaver somniferum*), *Peronospora arborescens* on, in Hungary, 140.
— —, *Sclerotinia sclerotiorum* on, in U.S.S.R., 477.
Opuntia, *Gloeosporium lunatum* on, in U.S.A., 810; transmission of, by *Chelindea vittiger*, 810.
—, *Sclerotinia opuntiarum* on, in the Argentine, 478.
— *amophila*, *Mycosphaerella opuntiae* on, in U.S.A., 404.
— —, *Stevensea wrightii* on, in U.S.A., 404; *Perisporium wrightii* synonym of, 404.
Orange (*Citrus aurantium*, *C. sinensis*, &c.), albinism in, in Palestine, 247.
—, *Ascochyta citri* on, in Brazil, 672.
—, *Botrytis cinerea* on, in the Argentine, 295; in Japan, 430.
— brown spot in New S. Wales and Queensland, 19.
— button-browning in S. Africa, 805.
— cold storage injury in S. Africa, 805.
—, *Colletotrichum gloeosporioides* on, in Dutch E. Indies, 795; phosphorus deficiency in relation to, 795.
—, *Diplodia natalensis* on, in Dutch E. Indies, 795; in Palestine, 102.
—, *Dothiorella* on, in Palestine, 263.
—, *Elsinoe fawcetti* on, in Puerto Rico, 308.
—, exanthema of, in Cyprus, 91.
— 'foam' disease in Dutch E. Indies, 795; *Xylotrupes gideon* in relation to, 795.
— fruit fall in Queensland, 502.
—, *Fusarium* on, in Java and Malaya, 504; *Nectria* stage of, 504.
—, *Gibberella fujikuroi* on, in India, 175.
—, *Gloeosporium* on, in New S. Wales and Queensland, 20.
— 'gooseflesh' in S. Africa, 805.
—, internal decline of, in Cyprus, 91.
— leprosis in Brazil, 101.
— mottle leaf in Cyprus, 91; in New Zealand, 103.

[Orange] mottling in India, 373.
—, *Nectria flavolanata* on, in Sierra Leone, 156.
—, — *haematococca* on, in Dutch E. Indies, 795.
— 'nooksan' in Palestine, 102.
— oleocellosis in Sicily, 307.
—, *Penicillium digitatum* on, control, 102; factors affecting, 102; occurrence in Australia, 102; in New S. Wales, 726; in Palestine, 102.
—, — *italicum* on, in New S. Wales, 726; in Palestine, 726.
—, physiological breakdown of, in S. Africa, 806.
—, *Phytophthora citrophthora* on, in Cyprus, 91; in U.S.A., 103.
—, *Poria hypolateritia* on, in Ceylon, 655.
—, *Pseudomonas citriputeale* on, bacteriophage of, in U.S.S.R., 445.
— psorosis, control, 671; occurrence in the Argentine, 248; in U.S.A., 671, 789.
—, *Pythium ultimum* can infect, 497.
—, *Septobasidium spongia* on, in the Dominican Republic, 58.
—, *Sphaceloma citri* on, in the Dominican Republic, 58; synonymy of, 58.
— storage spot in Australia, 667.
— water spot in U.S.A., 19.
— xyloporosis in Brazil, 101.
— yellow spot in Italy, 673; *Empoasca fabae* in relation to, 673.
Orchids, *Hemileia americana* or *H. oncidii* on, in Holland, 154.
—, *Rhizoctonia* spp. on, forming mycorrhiza, in Mexico and U.S.A., 801.
Ornithogalum umbellatum, *Puccinia anomala* on, 387.
Orthex, use of, with fungicides, 236.
'Ortho' as a spreader, 496.
Ortho-arsenic acid, use of, as a timber preservative, 220.
Ortho-phenylphenol, use of, against *Botrytis cinerea* and *Penicillium* on grapes, 805.
Oryza sativa, see Rice.
Osmolites, composition of, and use of, as a timber preservative, 775.
Ostrya carpinifolia, *Valsa decorticans* on, in Italy, 72.
Othreis fullonia transmitting *Oospora citri-aurantii* on citrus, 796.
Ovulinia azaleae on *Kalmia latifolia*, *Rhododendron*, and *Vaccinium* in U.S.A., 742.
Oxalic acid, production of, by wood-destroying fungi, 426.
Oxalis, *Oidiopsis taurica* on, in French Morocco, 83.
Oxobordo, use of, against *Alternaria solani* on potato, 237.
Oxyacetylene process of timber preservation, 656.

Pachybasidium on strawberry in England, 809.
Pachyma cocos in Japan, 'bukuryo' identified as, 152.
Paeonia, see Peony.
Palm oil, effect of, on *Hevea* rubber bark, 816.
Palustrex, use of, against (?) *Septoria acicola* on pine, 786.
— sulfonate B, injury caused by, 598.
Panicum maximum, *Bacterium vasculorum* can infect, 274, 374.
— *miliaceum*, *Bacterium panici* on, in Bulgaria, 413.
— —, *Melanomma panici-miliacei* on, in U.S.S.R., 589.
— —, oats mosaic can infect, 297.
Pansy (*Viola tricolor*), *Brevilegnia gracilis* on, in Holland, 112.
—, *Corticium solani* on, in England, 802; in Holland, 112.
—, cucumber virus 1 affecting, in Germany, 509, 803.
—, *Fusarium culmorum* on, in Holland, 112.
—, *Myrothecium roridum* on, in England, 802.
—, *Pythium* on, in England, 802.
—, — *aphanidermatum*, *P. de Baryanum*, and *P. perniciosum* on, in Holland, 112.
Papain, effect of, on crown gall infections, 296.
Papaver nudicaule, *Phytophthora cryptogea* on, in New S. Wales, 373.
— —, *Sclerotium Delphinii* can infect, 183.
— *officinale*, potash deficiency in, in Germany, 54.
— *orientale*, *Sclerotium delphinii* can infect, 183.
— *somniferum*, see Opium poppy.
Papaw (*Carica papaya*), *Asperisporium caricae* on, in the Argentine, 478.
—, bunchy top of, in Puerto Rico, 375; transmission of, by insects, 376.
—, *Colletotrichum gloeosporioides* on, in Trinidad, 194.
—, *Diaporthe* (?) *citri* on, in Trinidad, 194.
— die-back in Queensland, 502.
—, *Guignardia* on, in Trinidad, 194.
—, *Helminthosporium papayae* on, in Malaya, 505.
— leaf crinkle in India, 750.
— mosaic in Trinidad, 808; transmission of, by insects, 808.
—, *Mycosphaerella caricae* on, in Malaya, 505.
—, *Oidium caricae* on, in Bermuda, 506; (?) in U.S.A., 712.
—, *Phytophthora palmivora* on, in Ceylon, 655.
—, — *parasitica* var. *nicotianae* can infect, 419.
—, (?) virus disease of, in Hawaii, 693; in Queensland, 502.
—, yellow crinkle of, (?) in Hawaii, 657; in Queensland, 502.
Paper, fungi attacking, in Italy, 696.
Paphiopedilum, *Sclerotium rolfsii* on, in Java, 458.
Papilio podalirius, *Entomophthora sphaerosperma* on, in Hungary, 140.
Paracoccidioides brasiliensis on man in the Argentine, 800; in S. America, 29; in Uruguay, 252.
— *cerebriformis* on man in the Argentine, 800; in U.S.A., 29.

[*Paracoccidioides*] *tenuis* on man in U.S.A., 29.
Para-dichlorbenzene, use of, against *Peronospora tabacina* on tobacco, 349, 419, 482.
Para-nitrophenol, use of, as a rubber preservative, 273.
Parendomyces albus, *Mycotorula mucinosa* (?) identical with, 524.
Parsley (*Petroselinum sativum*), celery mosaic can infect, 369.
—, *Cercospora petroselini* on, in Portugal, 711.
—, *Erysiphe umbelliferarum* on, in Germany, 83.
Parsnip (*Pastinaca sativa*), *Pythium ultimum* can infect, 497.
—, *Ramularia pastinacae* on, in Bulgaria, 413.
Parthenocissus, see Virginia creeper.
Paspalum, *Claviceps paspali* on, isolation of active principle of, in U.S.A., 529.
— *dilatatum*, *Claviceps paspali* on, in Hawaii, 658; in New S. Wales, 460; in S. Africa, 460; toxicity of, to livestock, 460.
— *orbiculare*, *Claviceps paspali* on, in Hawaii, 658.
Passion fruit (*Passiflora edulis*), *Alternaria passiflorae* on, in New S. Wales, 234; in New Zealand, 235.
— —, *Cladosporium* on, in New Zealand, 331.
— —, *Colletotrichum* on, in S. Africa, 438.
— —, *Fusarium* and *Glomerella cingulata* on, in New Zealand, 331.
— —, *Phytomonas passiflorae* on, in New Zealand, 235, 331.
— —, virus disease of, in E. Africa, 727.
— —, woodiness of, in New S. Wales, 748; transmission of, by *Aphis* spp., *Macrosiphum solanifolii*, and *Myzus persicae*, 749.
Pastinaca sativa, see Parsnip.
Paxillus panuoides on timber in Germany, 426; in Great Britain, 362.
Pea (*Pisum sativum*), *Alternaria* on, in U.S.A., 495.
—, (?) *Aphanomyces euteiches* on, in U.S.A., 777.
—, *Ascochyta pinodella* on, in Germany, 831; in U.S.A., 237.
—, — *pisi* on, 832; in U.S.A., 777.
—, bacteriorrhiza of, in U.S.S.R., 128.
—, *Bacterium fascians* on, 597; in Sweden, 317.
—, broad bean mosaic can infect, 649.
—, clover mosaic (red) can infect, 600.
—, — virus 1 affecting, varietal reaction to, 6.
—, *Corticium solani* on, 759; in Germany, 831; in U.S.A., 495.
—, *Cylindrosporium pisi* on, in French Morocco, 289.
—, damping-off of, *Bacillus simplex* in relation to, 567; control, 236, 440; occurrence in U.S.A., 236, 440, 567.
— diseases, seed treatment against, in U.S.A., 236, 778.
—, *Fusarium* on, in U.S.A., 495.
[Pea, *Fusarium*] *avenaceum* on, in Germany, 831; in Holland, 154.
—, — *culmorum* on, in Holland, 154.
—, — *orthoceras* var. *pisi* on, in U.S.A., 81, 777.
—, — *oxysporum* on, in Germany, 831.
—, — — f. 8 on, in U.S.A., 777.
—, — *solani* on, in Germany, 831.
—, (?) — — var. *martii* f. 2 on, in U.S.A., 777.
—, — *sporotrichioides* on, in Holland, 154.
—, lettuce mosaic on, in England, 650, 784.
—, marsh spot of, manganese deficiency in relation to, 777; occurrence in Holland, 79, 777.
—, mosaic of, in China, 608; in England, 784; in New Zealand, 235. (See also under Pea viruses.)
—, *Mycosphaerella pinodes* on, in Germany, 831; in U.S.A., 237.
—, *Penicillium* on, in U.S.A., 495.
—, *Phytophthora cactorum* stimulated by growth factor present in, 129.
—, *Pseudomonas pisi* on, in New S. Wales, 501; in U.S.A., 777.
—, *Pullularia pullulans* on, in U.S.A., 495.
—, *Pythium de Baryanum* on, in Germany, 831.
—, reclamation disease of, copper deficiency in relation to, in Holland, 240.
—, *Rhizopus nigricans* on, in U.S.A., 495.
—, (?) *Sclerotinia sclerotiorum* on, in Holland, 153.
—, *Septoria pisi* on, (?) identical with *Rhabdospora hortensis*, 413; occurrence in Bulgaria, 413; in U.S.A., 237.
— streak, host range of, 648; occurrence in New Zealand, 648.
—, *Uromyces fabae* on, host-parasite relationship of, 812.
— virus 1 on broad bean in England, 784; in U.S.A., 288.
— — — on clover in U.S.A., 288.
— — — on pea in England, 784; in U.S.A., 150, 287; study on, 287; transmission of, by *Macrosiphum pisi*, 287; by *M. solanifolii*, 150, 287; not by *Aphis rumicis*, 151;
— — — on sweet pea in England, 784.
— — 2 on pea in New Zealand, 235.
Peach (*Prunus persica*), almond mosaic can infect, 260.
—, *Alternaria* on, in Canada, 535.
—, apricot mosaic can infect, 260.
—, *Bacterium pruni* on, in U.S.A., 376, 788.
—, — *tumefaciens* on, in U.S.A., 159.
— chlorosis in Bulgaria, 746; in France, 35; mosaic in relation to, 746.
—, *Cladosporium* on, in Canada, 535.
—, — *carpophilum* on, in Brazil, 401; in U.S.A., 785.
—, *Clasterosporium carpophilum* on, in Hungary, 535.
—, copper injury to, 536.
— little leaf, control, 36; cytology of, 43; factors affecting, 187; occurrence in S. Africa, 187; in U.S.A., 36, 43.

[Peach], little peach disease of, transmission of, by *Macropsis trimaculata*, 376; virus of, affecting plum, in U.S.A., 376.
— mosaic, control, 78; elimination of, from Czechoslovakia, 464; host relationships of, 260; occurrence in Bulgaria, 189; in U.S.A., 78; in U.S.S.R., 699.
—, *Penicillium* on, in Canada, 535.
—, phony disease of, in U.S.A., 322, 323.
—, plum mosaic pox affecting, 260; in Bulgaria, 188.
—, *Puccinia pruni-spinosae* on, in Australia, 190; in U.S.A., 745.
—, *Rhizopus nigricans* on, in Canada, 535.
—, *Sclerotinia fructicola* on, control, 535, 785; factors affecting, 535; occurrence in Canada, 535; in U.S.A., 120, 533, 785.
—, — *laxa* on, in Brazil, 401; in U.S.A., 533.
—, *Sphaerotheca pannosa* on, in Cyprus, 90; in Madagascar, 11; in U.S.A., 463; overwintering of, 463.
—, — — var. *persicae* on, in Egypt, 120.
—, *Taphrina deformans* on, in relation to mildew, 464; in U.S.A., 464, 786.
— woolliness in S. Africa, 804.
—, X-disease of, in U.S.A., 38, 401; virus of, affecting *Prunus demissa* in U.S.A., 402; *P. virginiana* in U.S.A., 39, 401.
— yellows affecting plum in U.S.A., 376; transmission of, by *Macropsis trimaculata*, 376.
Pear (*Pyrus communis*), *Aspergillus japonicus* on, in India, 188.
—, *Bacterium tumefaciens* on, control, 160, 381; occurrence in Germany, 160.
— chlorosis in Bulgaria, 746; in France, 36; in U.S.A., 702.
—, *Cladosporium aecidiicola* on, in Bulgaria, 413.
—, copper injury to, 536.
— cracking in Australia, 656; in New S. Wales, 155.
— crinkle in Australia, 656.
— die-back in New S. Wales, 155.
—, *Diplodia pseudodiplodia* on, in Germany, 507.
—, *Erwinia amylovora* on, breeding against, 442; factors affecting, 685; occurrence in U.S.A., 399, 442; studies on, 399, 684; varietal reaction to, 442; virulence of, 399.
— exanthema in U.S.A., 119; copper deficiency in relation to, 119.
—, *Fabraea maculata* on, in the Argentine, 478, 532; in U.S.A., 38, 259.
—, *Gymnosporangium sabinae* on, in Bulgaria, 413.
—, little leaf of, in S. Africa, 187.
— mosaic in Bulgaria, 746; in U.S.S.R., 699.
—, *Mycosphaerella sentina* on, in Belgium, 820.
—, *Penicillium expansum* on, in Bulgaria, 712.
—, *Pythium periplocum* on, in U.S.A., 650.
—, *Roestelia cancellata* on, in Italy, 572.
[Pear], *Sclerotinia* on, in Germany, 401.
—, stony pit of, in U.S.A., 463.
—, *Venturia pirina* on, control, 461, 462, 509, 744, 753; occurrence in England, 461; in France, 688, 806; in Germany, 462, 509, 753; in Victoria, 744.
Pelargonium, *Bacterium rhizogenes* cannot infect, 296.
—, — *tumefaciens* on, effect of papain and pepsin on, 296.
—, crinkle and mosaic of, in U.S.A., 442.
—, *Pythium megalacanthum* on, in Holland, 154.
— *zonale*, *Bacterium fascians* on, in Germany, 33, 317.
— —, — *tumefaciens* on, 159; chemical study on, 381.
— —, leaf curl of, in Italy, 739.
Pelloporus tomentosus var. *circinatus* renamed *Polyporus tomentosus* var. *circinatus*, 559.
Penicillium in relation to asthma and hay fever of man, 254, 799.
— on apple in Denmark, 118.
— on buildings in Great Britain, 334.
— on butter in U.S.A., 595.
— on cereals, 93.
— on cherry in U.S.A., 691.
— on cotton goods in New S. Wales, 726.
— on eggs in Northern Ireland, 180.
— on food in New Zealand and Victoria, 460.
— on maize, effect of, on *P. oxalicum*, 450; occurrence in U.S.A., 18, 450, 670.
— on man, 179.
— on pea in U.S.A., 495.
— on peach in Canada, 535.
— on pineapple in Queensland, 503.
— on timber in S. Africa, 438.
— on *Scorzonera tau-saghyz* in U.S.S.R., 137.
— on vine in S. Africa, 804.
— *chrysogenum* in meat in U.S.A., 255.
— *crustaceum* on chestnut in Italy, 355.
— — on citrus in U.S.S.R., 671.
— *crustosum* on chestnut in Bulgaria, 712.
— *digitatum* on citrus, control, 246, 589, 671; effect of *Oospora citri-aurantii* on, 390; occurrence in Australia, 657; in French Morocco, 246; in New S. Wales, 726; in S. Africa, 589; in U.S.A., 246; in U.S.S.R., 671; toxicity of certain chemicals to, 246.
— — on orange, control, 102; factors affecting, 102; occurrence in Australia, 102; in New S. Wales, 726; in Palestine, 102.
— *expansum*, antagonism of, to *Aspergillus flavus*, 173; to *Pythium de Baryanum*, 48.
— — on apple, control, 441; occurrence in Bulgaria, 712; in Denmark, 119; in England, 743; in Southern Rhodesia, 784.
— — on pear and quince in Bulgaria, 712.
— *frequentans* and *P. glabrum* in the upper air, 44.
— *glaucum*, copper requirements of, 240.
— —, humidity in relation to, 610.
— — on food in U.S.S.R., 468.

[*Penicillium glaucum*] on maize, toxicity of, to geese in S. Africa, 460.
— *humuli* on hops in Germany, 315.
— *italicum* on citrus, control, 246, 671; occurrence in Australia, 657; in French Morocco, 246; in New S. Wales, 726; in U.S.A., 246; in U.S.S.R., 671; toxicity of certain chemicals to, 246.
— — on grapefruit in Trinidad, 193.
— — on orange in New S. Wales, 726; in Palestine, 102.
— *lanosum* in the upper air, 44.
— *melinii* on meat in U.S.A., 255.
— *notatum*, antagonism of, to *Aspergillus flavus*, 173.
— — on maize, effect of, on *P. oxalicum*, 450; occurrence in U.S.A., 450.
— — on meat in U.S.A., 255.
— *oxalicum* on maize, effect of *P. notatum* on, 450; occurrence in U.S.A., 450.
— *puberulum* on meat in U.S.A., 255.
— (?) *rivolli* in relation to *Pythium arrhenomanes* on wheat, 449.
— *roseum* (?) synonym of *P. vermoeseni* (q.v.), 451.
— *rugulosum*, effect of, on *Phialophora fastigiata* and *Torulopsis candida* on wood pulp, 198.
— *thomii* in butter in Germany, 457.
— *vermoeseni* on *Cocos plumosa*, *Phoenix canariensis*, and *Washingtonia filifera* in U.S.A., synonymy of, 451.
— *viridicatum*, antagonism of, to *Aspergillus flavus*, 173.
Peniophora gigantea on timber in Great Britain, 361.
Pennisetum purpureum, *Bacterium vasculorum* can infect, 625.
— *typhoides*, *Tilletia ajrekari* in India, 628.
Pentachlorophenol as a timber preservative, 5, 285, 563.
Pentalonia nigronervosa, (?) transmission of *Musa textilis* mosaic by, 255.
Peony (*Paeonia*), *Botrytis paeoniae* on, in Estonia, 655.
—, *Cladosporium paeoniae* on, in the Argentine, 478.
—, *Pseudoperonospora cubensis* can infect, 86.
Pepper (betel), see *Piper betle*.
— (*Capsicum annuum*), see Chilli.
— (*Piper nigrum*), *Corticium salmonicolor* and *Phytophthora palmivora* var. *piperis* on, in Sumatra, 729.
Pepsin, effect of, on crown gall infections, 296.
Periconia circinata on wheat in England, 809.
Peridermium on pine, genetic connexion between *Cronartium gentianeum* and, 644; occurrence in Austria, 644.
— (Woodgate rust) on pine in America, 73.
— *cerebrum* on pine, *Cronartium quercuum* a stage of, 73; occurrence in Asia, 73.
— —, *Uredo quercus* distinct from, 73.
— *coloradense* on spruce in Alaska, 643.
— *cornui* on pine in Europe, 73.
— *guatemalense* on pine in America, 73.
[*Peridermium*] *himalayense* on pine in Asia, 73.
— *holwayi*, taxonomy of, 491.
— *indicum* on pine in Asia, 73.
— *kurilense* on pine in Asia, 73.
— *ornamentale*, taxonomy of, 491.
— *pini* and its f. *montanae* on pine in Europe, 73.
— *weirii* on pine in America, 73.
Perisporium wrightii synonym of *Stevensea wrightii*, 404.
Perkinsiella vastatrix transmitting Fiji disease of sugar-cane, 626, 709.
Permatol D as a timber preservative, 285.
'Pernicious canker' of poplar, 68.
Peronospora arborescens on opium poppy in Hungary, 140.
— *brassicae* f. *major* on cauliflower in Palestine, 275.
— *effusa* on spinach in Palestine, 275.
— *galligena* on *Alyssum saxatile* in Germany, 683.
— *gäumannii* on *Argemone mexicana* in India, 57; *P. indica* renamed, 57.
— *parasitica* on cabbage in New S. Wales, 234.
— — on colza in Germany, 494.
— *savulescui* on *Medicago hispida* in Palestine, 275.
— *schachtii* on beet in France, 79; in Palestine, 275; in U.S.A., 150.
— *schleideniana* on onion in Eire, 778; in U.S.A., 728; oospore germination in, 778.
— *spinaciae* on spinach, see *P. effusa*.
— *tabacina* on tobacco, control, 63, 349, 417, 418, 419, 482; factors affecting, 349, 350; occurrence in Australia, 63; in Brazil, 482; in U.S.A., 63, 349, 350, 417, 418, 419, 482; present knowledge of, 418; study on, 350.
— *trifoliorum* on lucerne in U.S.S.R., 398.
Persea americana, see Avocado pear.
Persimmon (*Diospyros kaki*), *Cephalosporium* on, in U.S.A., 537.
—, *Schizophyllum commune* on, in U.S.A., 537.
Pestalozzia on *Aleurites montana* in Burma, 655.
— on grapefruit in Sierra Leone, 156.
— on *Grevillea robusta* in India, 822.
— on mangosteen in Burma, 156.
— on *Nephelium litchi* in S. Africa, 438.
— *leprogena* on avocado, grapefruit, and mango in Trinidad, 193.
— *palmarum* on oil palm in Malaya, 503.
— — on *Phoenix canariensis* in Italy, 740.
— *psidii* on guava in India, 233.
— *theae* on *Leucaena glauca* in Sumatra, 579.
— — on tea in Java, 728; in Sumatra, 579, 729.
— *unicolor* on *Juniperus bermudiana* in Bermuda, 505.
Petroleum, use of, against *Phymatotrichum omnivorum* on cotton, 439.
— oil emulsion, use of, with fungicides, 120, 784.
—, see also Oil.
Petroselinum sativum, see Parsley.

Petunia, *Bacterium fascians* can infect, 597.
—, *Matthiola incana* var. *annua* mosaic can infect, 459.
— mosaic in Japan, 458.
— *hybrida*, *Sclerotium delphinii* can infect, 183.
— *violacea* mosaic in China, 608.
Peucedanum graveolens, see Dill.
Pezicula carpinea, emended description of, 762.
— — on *Carpinus caroliniana*, *Cryptosporiopsis fasciculata* conidial stage of, 761.
— *cinnamomea* on oak in Germany, 762.
— *corni* on *Cornus*, *Cryptosporiopsis cornina* conidial stage of, 761.
— *corticola* synonym of *P. crataegi*, 762.
— *crataegi* ascigerous stage of *Myxosporium corticola*, 762.
— *frangulae* on *Rhamnus frangula* in Germany, 762.
— *hamamelidis* on *Hamamelis virginiana*, *Cryptosporiopsis* conidial stage of, 761.
— *livida* on pine in Germany, 762.
— *malicorticis*, *Neofabraea malicorticis* (q.v.) synonym of, 762.
— *plantarium* can infect apple and quince, 507, 762.
— — on cherry in Germany, 507, 762.
— *pruinosa*, emended description of, 762.
— — on *Amelanchier*, *Sphaeronema pruinosum* conidial stage of, 761.
— *rubi*, emended description of, 762.
— — on *Rubus*, *Discosporiella phaeosora* conidial stage of, 761.
Peziotrichum saccardinum renamed *Septobasidium saccardinum*, 521.
Phaeocryptopus gaeumanni on *Pseudotsuga taxifolia* in Canada, 425; in Denmark, 826; in Eire, 425; in Germany, 75, 425; in N. America, 827; in Scotland, 425; in Switzerland, 490; in U.S.A., 425; varietal reaction to, 826.
Phaeosaccardinula butleri renamed *Chaetothyrium butleri*, 57.
Phaeosphaerella sentina, *Mycosphaerella sentina* renamed, 820.
Phalaris canariensis, reclamation disease of, copper deficiency in relation to, in Holland, 240.
Phaseolus acutifolius and *P. aureus*, *Bacterium phaseoli* on, varietal reaction to, 127.
— *lunatus*, *Achromobacter lipolyticum* on, in U.S.A., 227.
— —, *Bacterium phaseoli* on, in Bermuda, 505.
— —, *Cladosporium herbarum* on, in U.S.A., 227.
— —, *Elsinoe phaseoli* on, in the Dominican Republic, 58.
— —, *Macrophomina phaseoli* on, in U.S.A., 82.
— —, *Phyllosticta* on, in Bermuda, 505.
— —, *Pseudomonas ovalis* on, (?) identical with *Achromobacter coadunatum*, 227; occurrence in U.S.A., 227.
— —, *Pseudoperonospora cubensis* can infect, 86.
[*Phaseolus lunatus*], spotting and stickiness of, in U.S.A., 227.
— —, *Uromyces appendiculatus* on, in Bermuda, 505.
— *multiflorus*, see Beans.
— *vulgaris*, see Beans.
Phenothiazine and its derivatives, toxicity of, to *Glomerella cingulata*, *Sclerotinia fructicola*, and *Venturia inaequalis*, 806.
Phialophora on man in the Argentine, 800.
— *fastigiata* on wood pulp, effect of *Penicillium rugulosum* on, 198; factors affecting, 774; occurrence in Sweden, 198.
— *verrucosa* on man in Brazil, 28.
Phialospora richardsiae on wood pulp in Italy, 362.
Phillyrea media, *Pseudomonas savastanoi* can infect, 825.
Phleospora trifolii var. *recedens* on clover renamed *Stagonospora recedens*, 320.
Phleum pratense, *Sclerotinia borealis* on, in Sweden, 298.
——, — *graminearum* on, 581.
— —, *Typhula itoana* on, in Sweden, 298.
Phlyctaena linicola, see *Sphaerella linorum*.
Phoenix canariensis, *Penicillium vermoeseni* on, in U.S.A., 451; synonymy of, 451.
— —, *Pestalozzia palmarum* on, in Italy, 740.
Pholiota adiposa on *Salix* in U.S.A., 643.
— *aurivella* on *Abies*, ash, and beech in Yugoslavia, 562; formerly attributed to *P. adiposa*, 562.
— *squarrosa* on timber, 360.
Phoma in relation to asthma and hay fever in man in Canada and U.S.A., 254.
— on beet in U.S.A., 441.
— on citron in Crete, 672.
— *araliae* var. *microspora* on *Aralia cordata* in Japan, 434.
— *betae* on beet, control, 77, 567, 646; factors affecting, 646; occurrence in Belgium, 79; in Canada, 430; in England, 646; in U.S.A., 5, 76, 566, 776.
— *chartae* on paper in Italy, 696.
— *citricarpa* on citrus in U.S.S.R., 671.
— — on grapefruit in Dutch E. Indies, 795.
— *destructiva* on tomato in New Zealand, 726; in Southern Rhodesia, 785; in Trinidad, 194.
— *dunorum* on pine in Holland, 358.
— *endoyena* on chestnut in Italy, 572.
— *eupyrena* on potato in Norway, 412.
— *exigua* on flax in Germany, 316.
— *herbarum* on flax in Holland, 154.
— *hesperidum* on citrus in U.S.S.R., 671.
— *hysterella* synonym of *Phyllostictina hysterella*, 75.
— *insidiosa* on sorghum in Italy, 517.
— *lingam* can infect flax, 316.
— — in soil in New Zealand, 234.
— — on cabbage in Germany, 494.
— — on colza in New Zealand, 494.
— — on horse-radish in Germany, 365.
— — on swedes in New Zealand, 222.

[*Phoma*] *lini* on flax in Germany, 315.
— *meliloti* a stage of *Stagonospora meliloti*, 320.
— *prunicola*, see *Phyllosticta prunicola*.
— *uvicola* imperfect stage of *Guignardia bidwellii*, 478.
Phomopsis on mangosteen in Burma, 156.
— on pistachio nut in Greece, 125.
— on poplar in France, 68.
— *gardeniae* on *Gardenia* in U.S.A., 33.
— (?) *juniperovora* on juniper in U.S.A., 444.
— *lokoyae* on *Pseudotsuga taxifolia* in N. America, 827.
— *pseudotsugae* on *Pseudotsuga taxifolia* in Czechoslovakia, 490.
— *ribis* on currants and gooseberry in France, 324; *Eutypa lata* var. *ribis* the perfect stage of, 324; *Libertella ribis* (?) identical with, 324.
— *vexans* on eggplant in Canada, 725; in the Philippines, 370, 444.
— — on tomato in Hungary, 140.
Phormium tenax, *Corticium centrifugum* on, in Japan, 205.
Phosphatase, inactivation of viruses by, 714.
Phosphates, effect of, on growth of mushrooms, 229.
Phosphorus deficiency in coffee, 22.
— — in pine in Czechoslovakia, 3.
— — in relation to *Colletotrichum gloeosporioides* on orange, 795; to potato leaf roll, 545; to *Urocystis tritici* on wheat, 791.
Phragmidium on rose in U.S.A., 128.
— *disciflorum* synonym of *P. mucronatum*, 275.
— *mucronatum* on rose in England, 184, 528; synonymy of, 275; *Tuberculina persicina* parasitizing, 528.
— *rosae* synonym of *Teloconia rosae*, 711.
— *rubi-parvifolii* on raspberry in China, 553.
— *shensianum* on raspberry in China, 552.
— *subcorticium* synonym of *P. mucronatum*, 275.
Phragmodothella kelseyi on *Ribes* in France, 325.
Phragmothyrium semiarundinariae on bamboo in Japan, 204.
Phycomyces nitens, humidity in relation to, 610.
Phycomycetes, list of, in Hungary, 139.
— pathogenic to tobacco, list of, 482.
Phycomycetoid fungus, endotrophic, see *Rhizophagus*.
Phycopsis in Australia, 627.
Phyllactinia, host range of, 58.
Phyllosticta on *Durio zibethinus* in Malaya, 504.
— on *Grevillea robusta* in Ceylon, 713, 822; in India, 822.
— on *Phaseolus lunatus* in Bermuda, 505.
— *angulata* on apple in England, 400.
— *antirrhini* on *Antirrhinum majus* in Denmark, 572; in Poland, 458.
— *beijerinckii* on apricot in Hungary, 535.
— *heveae* on rubber in Sumatra, 579.
— *mali* on apple in Czechoslovakia, 464.
[*Phyllosticta*] *medicaginis* on lucerne in Hawaii, 658; in U.S.S.R., 397.
— *prunicola* on almond, apricot, and cherry, in Hungary, 535.
— — on plum in Czechoslovakia, 464; in Hungary, 535.
— — renamed *Coniothyrium prunicolum*, 534; synonym of *Phoma prunicola*, 534.
— *sojaecola*, see *Pleosphaerulina sojaecola*.
— *viridis* imperfect stage of *Mycosphaerella fraxinicola*, 638.
Phyllostictina on *Cinchona* in Sumatra, 578.
— *hysterella*, *Phoma hysterella* synonym of, 75.
— —, *Physalospora gregaria* var. *foliorum* ascigerous stage of, 75.
Phylloxera vastatrix in relation to courtnoué of vine, 294, 571, 652.
Phymatotrichum omnivorum, effect of chemicals on, 175.
— —, nature of resistance to, 24.
— — on beet in U.S.A., 76.
— — on cotton, control, 439, 590; distribution of, 674; effect of, on yield, 106; factors affecting, 106, 590; germination of sclerotia of, 674; occurrence in U.S.A., 106, 439, 590, 674.
Physalis leaf roll in U.S.S.R., 699.
— *angulata*, 'giantism', mosaic, and stringiness of, in U.S.S.R., 699.
— *francheti*, tomato spotted wilt affecting, in France, 65.
— *peruviana*, woodiness of, in U.S.S.R., 699.
— *pubescens*, potato yellow dwarf can infect, 270.
Physalospora gregaria var. *foliorum* on yew in Great Britain, 75; perfect stage of *Phyllostictina hysterella*, 75.
— *miyabeana* on *Salix* in U.S.A., 827.
— *obtusa*, antagonism of *Actinomyces albus* to, 129.
— — on apple in England, 744.
— —, *Sphaeria gleditschiae* identical with, 628.
Phytomonas fascians, see *Bacterium fascians*.
— *passiflorae* on passion fruit in New Zealand, 235, 331.
— *rubrisubalbicans* on sorghum in Italy, 517.
Phytophthora on *Achras sapota* in Burma, 655.
— on asparagus in U.S.A., 151.
— on citron in Crete, 672.
— on citrus in U.S.S.R., 671.
— on grapefruit in Puerto Rico, 308.
— on *Hevea* rubber in Malaya, 342.
— on *Piper betle* in India, 437.
— on strawberry in England, 809; in U.S.A., 123.
— on tomato in U.S.A., 421.
— *arecae* on areca palm, control, 89, 233; occurrence in India, 89, 233, 518; study on, 518.
— *cactorum*, effect of growth substances on, 336.
— —, growth substance for, contained in peas, 129.
— —, homothallism in, 472.

[*Phytophthora cactorum*] on apple, control, 320, 807; occurrence in U.S.A., 807; varietal reaction to, 321.
— — on *Cotoneaster horizontalis* in Canada, 726.
— — on hops in New Zealand, 55.
— — on tulip in Canada, 726.
— *cambivora* on beech, 825; in England, 282.
— — on chestnut, control, 70, 355, 826; factors affecting, 283; occurrence in England, 282, 825; in Italy, 1, 70, 355; study on, 282; specific and varietal reaction to, 1, 70, 355, 825.
— — on elm, 826.
— — on *Nothofagus* and oak, 826.
— —, *P. cinnamomi* synonym of, 33.
— *capsici* on chilli in the Argentine, 85.
— *cinnamomi* on beech, 825.
— — on chestnut in England, 282, 825.
— — on *Erica* in U.S.A., 33.
— — on pineapple in Hawaii, 33.
— — on *Rhododendron* in U.S.A., 33.
— — synonym of *P. cambivora*, 33.
— *citrophthora*, antagonism of *Trichoderma koningi* to, 485, 486; of *T. lignorum* to, 485.
— — on citrus in U.S.A., 450, 518.
— — on lemon in U.S.A., 247.
— — on orange in Cyprus, 91; in U.S.A., 103.
— *colocasiae* on *Alocasia* in Ceylon, 655.
— — on *Colocasia* in Malaya, 505.
— *cryptogea* on gloxinia in U.S.A., 316.
— — on *Papaver nudicaule* in New S. Wales, 373.
— — on tomato in New Zealand, 726.
— — on tulip in England and Scotland, 183.
— *drechsleri* on beet in U.S.A., 76.
— *erythroseptica* on potato in Holland, 135.
— — on tulip in England and Scotland, 183.
— *fagi* on conifers, 358.
— *infestans*, on potato, biochemical study on, 758; breeding against, 135, 706; control, 51, 412, 728, 758; effect of, on yield, 411; factors affecting, 271, 707, 814; genetics of resistance to, 408; in relation to *Spongospora subterranea*, 611; nature of resistance to, 135, 271; occurrence in Bermuda, 505; in Eire, 758; in Estonia, 411; in France, 814; in Holland, 154; in Java, 814; in Norway, 411; in the Philippines, 444; in Scotland, 408; in Tasmania, 51; in U.S.A., 544, 728; in U.S.S.R., 135, 271, 611, 707; spray warnings against, 154; study on, 814; varietal reaction to, 51, 135, 269, 271, 408, 411, 412, 444, 544, 814.
— — on tomato in Hungary, 140; in U.S.A., 728.
— *megasperma* on beet in England, 646.
— *melongenae* on eggplant in the Philippines, 370.
— *palmivora* can infect pineapple, 504.
— — on cacao in Brazil, 92.
— — on *Hevea* rubber in Java, 579; in Malaya, 341.
[*Phytophthora palmivora*] on papaw in Ceylon, 655.
— — var. *piperis* on pepper in Sumatra, 729.
— *parasitica*, antagonism of *Trichoderma koningi* to, 486.
— — can infect pineapple, 504.
— —, host range of, 742.
— — on citrus in Dutch E. Indies, 794; in U.S.A., 450, 518; technique for isolation of, 450.
— — on eggplant in the Philippines, 444.
— — on *Hibiscus manihot* in Japan, 742.
— — on lily in Bermuda, 506.
— — on lime in Trinidad, 671.
— — on tobacco in Southern Rhodesia, 632.
— — on tomato, antagonism of *Trichoderma koningi* to, 485, 486; occurrence in Italy, 486.
— — var. *nicotianae*, hosts of, in Java, 419.
— — — — on tobacco, control, 787; factors affecting, 419, 481; notes on, 555, 765; occurrence in Java, 419, 481, 554; in Sumatra, 765; in U.S.A., 482, 787; study on, 419; varietal reaction to, 482.
— *syringae* on beech, 825; in England, 282.
— — on chestnut, 825.
Phytotoxaemias of insect origin, review of information on, 697.
Picea, see Spruce.
Piedraia hortai on man in the Argentine, Brazil, and Colombia, 526; in French Indo-China, 800; in Venezuela, 526.
— *javanica* on man in Java, 27.
Pieris brassicae and *P. rapae*, use of Métalnikov's bacilli to control, 379.
Piesma quadratum, control of, by *Beauveria*, 107.
Pig, *Blastocystis hominis* on the, in Germany, 676.
Pigeon pea (*Cajanus cajan*), *Fusarium* on, in India, 501.
— —, — *vasinfectum* on, in India, 293.
— —, tobacco brown root rot can affect, 716.
Pine (*Pinus*), *Alternaria tenuis* on, in Holland, 358.
—, *Boletus* spp. forming mycorrhiza of, in Java and New Zealand, 406; in Queensland, 502; in Sweden, 542.
—, *Botryodiplodia theobromae* on, in Holland, 358.
—, *Botrytis cinerea* on, in Holland, 358.
—, *Caliciopsis pinea* on, in N. America, 827.
—, *Cenangium abietis* on, in Czechoslovakia, 490.
—, *Ceratostomella coerulescens*, *C. piceae*, *C. pilifera*, and *C. pini* on, in Poland, 488.
—, *Coleosporium crowellii* on, in U.S.A., 2.
—, — *vernoniae* on, in U.S.A., 424.
—, *Coniophora* (?) *olivacea* on, in Norway, 559.

[Pine], *Coniothyrium pityophilum* on, in Holland, 358.
—, *Corticium solani* on, control, 786; factors affecting, 561; occurrence in Holland, 358; in U.S.A., 561, 786.
—, *Cronartium asclepiadeum* on, nomenclature of, 73.
—, — *coleosporioides*, *C. comandrae*, *C. comptoniae*, *C. occidentale*, and *C. quercuum* on, in America, 73.
—, — *ribicola* on, annual growth rate of cankers of, in U.S.A., 72; control, 73, 359, 424; factors affecting, 216; legislation against, in U.S.A., 80; occurrence in Canada, 216; in Europe, 73; in N. America, 827; in Switzerland, 424; in U.S.A., 3, 72, 73, 216, 359, 562; *Ribes* eradication against, 359; study on, 216; varietal reaction to, 3.
—, *Cylindrocarpon didymum* and *C. radicicola* on, in Holland, 358.
—, damping-off of, in U.S.A., 561.
—, *Diplodia pinea* on, (?) in Austria, 57; in Australia, 656; in U.S.A., 643; comparison of, with *Sphaeropsis ellisii*, 57.
—, *Fomes annosus* on, in Denmark, 773.
—, — *pini* on, in Norway, 559; in U.S.A., 284.
—, — *pinicola* on, in Norway, 559.
—, *Fusarium oxysporum*, *F. scirpi*, and *F. solani* on, in Holland, 358.
—, *Gliocladium penicillioides* on, in Holland, 358.
—, *Hypodermella sulcigena* on, in Czechoslovakia, 490.
—, *Lophodermium pinastri* on, in U.S.A., 360.
— mycorrhiza, *Boletus* spp. forming, 406, 502, 542; *Coenococcum graniforme* (*Mycelium radicis nigrostrigosum*) forming, 701; Gastero- and Hymenomycetes forming, 541; occurrence in Java and New Zealand, 406; in Northern and Southern Rhodesia and Nyasaland, 406; in Queensland, 502; in Sweden, 542; in U.S.A., 267; *Rhizopogon rubescens* and *Scleroderma bovista* forming, 406.
—, *Naemosphaera rostellata* on, in Holland, 358.
—, needle fusion of, control, 491; factors affecting, 283, 491, 502; occurrence in England, 283, 502; in New S. Wales, 491; in Queensland, 502; study on, 491.
—, *Peridermium* on, genetic connexion between *Cronartium gentianeum* and, 644; occurrence in Austria, 644.
—, — (Woodgate rust) on, in America, 73.
—, — *cerebrum* on, *Cronartium quercuum* a stage of, 73; occurrence in Asia, 73.
—, — *cornui* on, in Europe, 73.
—, — *guatemalense* on, in America, 73.
—, — *himalayense*, *P. indicum*, and *P. kurilense* on, in Asia, 73.
—, — *pini* and its f. *montanae* on, in Europe, 73.
—, — *weirii* on, in America, 73.
[Pine], *Pezicula livida* on, in Germany, 762.
—, *Phoma dunorum* on, in Holland, 358.
—, phosphorus deficiency in, in Czechoslovakia, 3.
—, *Pleospora herbarum* on, in Holland, 358.
—, *Polyporus schweinitzii* on, in Norway, 559; in U.S.A., 284.
—, *Pullaria pullulans* on, in U.S.A., 217.
—, *Pythium artotrogus* on, in Holland, 358.
—, — *de Baryanum* on, control, 786; factors affecting, 561; occurrence in Holland, 358; in U.S.A., 561, 786.
—, (?) — *torulosum* on, in Holland, 358.
— rosette in Western Australia, 643.
—, *Septoria acicola* on, in Bulgaria, 413; in U.S.A., 360, (?) 786.
—, *Sphaeropsis ellisii* on, see *Diplodia pinea* on.
—, *Stemphylium asperulum* on, in Holland, 358.
—, *Thelephora laciniata* on, in Czechoslovakia, 490.
—, *Trichoderma lignorum* on, in Holland, 358.
—, *Tympanis* on, in North America, 827.
—, — (?) *pinastri* on, in U.S.A., 217.
—, *Uredo quercus* on, in Europe, 73; distinct from *Peridermium cerebrum*, 73.
Pineapple (*Ananas comosus*), black heart of, in Queensland, 503.
—, *Ceratostomella paradoxa* on, in transit from Puerto Rico, 748.
—, 'crookneck' of, and *Fusarium* on, in Queensland, 503.
—, heart rot of, in Malaya, 503.
—, marbling of, and *Penicillium* on, in Queensland, 503.
—, *Phytophthora cinnamomi* on, in Hawaii, 33.
—, — *palmivora* and *P. parasitica* can infect, 504.
—, virus disease of, in the Philippines, wrongly identified as yellow spot, 465.
— yellow spot in S. Africa, 465.
Pink, see *Dianthus*.
Pinus, see Pine.
Piper betle, *Colletotrichum* on, in India, 234.
— —, *Gloeosporium* on, in India, 437.
— —, *Oidium* on, in Burma, 156; (?) in India, 437.
— —, *Phytophthora* on, in India, 437.
— —, *Pythium splendens* var. *hawaiianum* on, in Malaya, 505.
— *guineense*, *Bacterium tumefaciens* on, in Kenya, 572.
— *nigrum*, see Pepper.
Piptocephalis cylindrospora on *Mucor albo-ater* in Scotland, 137.
Piricularia oryzae on rice, cellulose decomposition by, 708; factors affecting, 88, 546; occurrence in Colombia, 12; in India, 88; in Italy, 580; in Japan, 546, 708; varietal reaction to, 88.

Pistachio nut (*Pistacia vera*), *Botryodiplodia pistaciae* on, in Italy, 330.
— —, *Phomopsis* on, in Greece, 125; *Tinea pistaciae* and other insects in relation to, 125.
Pistacia terebinthus, *Botryodiplodia pistaciae* can infect, 331.
Pisum, see Pea.
— virus 3, see Pea streak.
Pityrosporum malassezi on man in the Philippines, 110.
— *ovale* on man in U.S.A.
Plane tree, see *Platanus*.
Plant diseases, agreement to use standard names for fungi causing, in Great Britain, 754.
— —, breeding work against, survey of, 195.
— —, chemical factors affecting resistance of plants to, 267.
— —, control of, in tropical and subtropical countries, 506; survey of new methods for, 125.
— —, heredity factors relating to, 754.
— — in Czechoslovakia, 436, 437; in Germany, 436; in Manitoba, 467; in New Zealand, 726; in Poland, 155; in Queensland, handbook on, 125.
— —, losses caused by, 30, 41, 94, 102, 287, 318, 405, 483, 580, 596, 722, 725, 773, 819; indices for, 580.
— —, nutrition in relation to, 127, 757.
— —, regressive changes induced by, 754.
— —, Sorauer's handbook on, revised edition of, 697.
— nutrition, bibliography of literature on minor elements in relation to, 547.
— pathology, Japanese work on, 467.
— physiology, text-book on, 127.
— protection in England, 694.
— — service, organization of the Polish, 640.
— protectives, list of, in New Zealand, 695; official testing of, in Sweden, 605.
Plantain (*Musa paradisiaca*), *Bacterium solanacearum* on, in Haiti, 328.
—, *Cercospora musae* on, in Central and S. America, 329.
—, *Sclerotium rolfsii* on, in India, 233; perfect stage of, 233.
Plasmodiophora brassicae on broccoli in U.S.A., 427.
— — on cabbage, control, 443, 508, 728; occurrence in Germany, 508; in Palestine, 275; in U.S.A., 443, 728.
— — on cauliflower and kohlrabi in Palestine, 275.
— — on mustard in Germany, 509.
— — on swedes in Sweden, 776.
— — on turnip, breeding against, 776; control, 509; occurrence in Germany, 509; in Sweden, 720, 776; varietal reaction to, 509, 720, 776.
— —, viability of, in soil in New Zealand, 645.
— *solani* on potato in Hungary, relation of, to potato viruses, 140.
Plasmopara viticola on vine, breeding against, 371, 435, 653; control, 10, 87, 153, 508, 653, 781; germination of oospores of, 782; occurrence in Denmark, 88; in France, 10, 153; in Germany, 371, 435, 508, 510; in Italy, 653, 781; in Rumania, 232, 782; in Switzerland, 87; in U.S.S.R., 653; overwintering of, 653; spray residues in soil in relation to, 435; varietal reaction to, 508, 510, 653.
[*Plasmopara viticola*] on *Vitis caesia* in Sierra Leone, 157.
Platanus, *Gnomonia veneta* on, in N. America, 827.
—, *Nectria coccinea* can infect, 280.
— *occidentalis* and *P. orientalis*, *Discula platani* on, in Italy, 213.
Pleocyta sacchari on sugar-cane in Brazil, 624; in Egypt, 625; in the Philippines, 625; in Queensland, 274; varietal reaction to, 274.
Pleosphaerulina sojaecola on soy-bean in Germany, 292.
Pleospora stage of *Macrosporium* on *Aucuba japonica* in Italy, 741.
— *herbarum* among sooty moulds in Australia, 627.
— — on lettuce in S. Africa, 496.
— — on pine in Holland, 358.
— —, *Stemphylium botryosum* (*Macrosporium sarcinula*) conidial stage of, 141.
— *lycopersici* can infect tomato, 716; comparison of, with *Stemphylium sarcinaeforme*, 717.
— *pomorum* on apple in England, 744.
Plowrightia ribesia on *Ribes* in France, 325.
Plum (*Prunus domestica*), apoplexy of, *Valsa cincta* and *V. leucostoma* in relation to, in Germany, 508.
—, broad streak and ring-spot variegation of, in Bulgaria, 188, 745.
—, *Byssochlamys fulva* on, in England, 191.
—, *Clasterosporium carpophilum* on, in Hungary, 535.
—, *Coniothyrium prunicolum* on, see *Phyllosticta prunicola* on.
—, *Diplodia pseudodiplodia* on, in Germany, 507.
— drought spot in U.S.A., 745; boron content in relation to, 745.
—, internal breakdown of, in S. Africa, 804.
—, little peach disease affecting, in U.S.A., 376.
— mosaic in Bulgaria, 189, 746; in U.S.S.R., 699; transmission of, to peach, 260.
—, narrow-striped variegation of, in Bulgaria, 189, 745.
—, peach mosaic affecting, 260.
—, — yellows affecting, in U.S.A., 376.
—, *Phyllosticta prunicola* on, in Czechoslovakia, 464; in Hungary, 535; renamed *Coniothyrium prunicolum*, 534.
— pox, see broad streak of.
—, *Pseudomonas cerasi* on, in U.S.A., 689, 690.
—, — *mors-prunorum* on, in Denmark, 88; in England, 654, 689; in Holland, 153; varietal reaction to, 654.

[Plum, *Pseudomonas*] *spongiosa* on, in Holland, 153.
—, *Puccinia pruni-spinosae* on, control, 190, 259; effect of, on host, 128; occurrence in Australia, 190; in U.S.A., 128, 745; in Yugoslavia, 259.
—, *Sclerotinia fructicola* on, in U.S.A., 603.
—, — *laxa* on, in Bulgaria, 190; in England, 461; in U.S.A., 534.
—, *Stereum purpureum* on, in Victoria, 744.
—, *Torulopsis pulcherrima* on, in Switzerland, 259.
Plutella maculipennis, use of Métalnikov's bacilli to control, 380.
Poa annua, *P. pratensis*, and *P. serotina*, *Sclerotinia borealis* on, in Sweden, 298.
— *trivialis* f. *folii albovittai*, *Corticium centrifugum* on, in Japan, 205.
Podosphaera, host range of, 58.
— *leucotricha* on apple in Germany, 507; in Southern Rhodesia, 784.
— — on quince in England, 295.
Poinciana regia, *Cercosporella theae* on, in India, 822.
Pollaccia elegans imperfect stage of *Venturia populina*, 639.
Polygonum aviculare and *P. persicaria*, *Helicobasidium purpureum* on, in England, 654.
Polymyxa graminis in soil and on wheat in Canada, 449.
Polyporaceae, criteria for classification of, 479.
—, of Brazil, 710; of Denmark, 215.
— on timber, list of new, in U.S.A., 422.
—, spore discharge of, 215.
(?) Polypore on oil palm in Malaya, 503.
Polyporus on timber in Great Britain, 361.
— *adustus*, effect of growth substances on, 335.
— —, spore discharge of, 215.
— *amorphus*, effect of growth substances on, 335.
— *anceps* on timber, 4.
— *balsameus* on *Abies balsamea* and beech in U.S.A., 2.
— *benzoinus*, effect of growth substances on, 335.
— — on timber in Great Britain, 361.
— —, spore discharge of, 215.
— *betulinus* on timber, biochemistry of, 4.
— *borealis* on spruce in Norway, 559.
— — on timber in Great Britain, 361.
— *dryadeus* on oak in Austria, 215.
— *erubescens*, reaction of, to iodine, 645.
— *glomeratus* on beech and maple in U.S.A., 487.
— *hispidus* on forest trees in U.S.A., 280.
— — on timber, zonate discoloration in, 69.
— *japonicus* on timber, biochemistry of, 4.
— *lapponicus*, reaction of, to iodine, 645.
— *litschaueri*, hosts of, in U.S.S.R., 356.
— —, *Spongipellis litschaueri* renamed, 356.
— *obtusus* synonym of *P. litschaueri*, 356.
— *orientalis* on timber, biochemistry of, 4.
[*Polyporus*] *robiniophilus* on timber, varietal reaction to, 285.
— *rubidus* on *Cinchona* in Sumatra, 578.
— *rugulosus* on *Hevea* rubber in Java, 452; (?) identical with *P. zonalis*, 452.
— *schweinitzii* on cherry in Norway, 559.
— — on conifers in Great Britain, 361.
— — on forest trees in Alaska, 643.
— — on larch and oak in Norway, 559.
— — on pine in Norway, 559; in U.S.A., 284.
— — on timber, biochemistry of, 4.
— *shoreae* on *Shorea robusta* in India, 642.
— *sulphureus* on birch in U.S.S.R., 145.
— — on conifers in Great Britain, 361.
— — on timber, biochemistry of, 4, 426.
— *tomentosus* var. *circinatus* on spruce in Norway, 559; *Pelloporus tomentosus* var. *circinatus* synonym of, 559.
— *ursinus*, reaction of, to iodine, 645.
— *zonalis*, encrusted cystidia of, 341.
— — on *Hevea* rubber in Ceylon, 655.
— —, *P. rugulosus* (?) identical with, 452.
Polyrhina multiformis synonym of *Harposporium anguillulae*, 107.
Polyspora lini on flax, antagonism of soil micro-organisms to, 111; control, 111; occurrence in Canada, 111; in Denmark, 88; in U.S.S.R., 256; serological study on, 127; varietal reaction to, 127.
Polystictus abietinus, effect of growth substances on, 335.
— — on timber in Great Britain, 361; in U.S.A., 562.
— —, physiology of, 219, 284.
— *pergamenus* on timber, biochemistry of, 4.
— *sanguineus* on timber, biochemistry of, 4; specific reaction to, 221.
— *versicolor* on timber, specific reaction to, 221.
— —, production of oxalic acid by, 426.
— —, use of, for testing timber preservatives, 829.
Polythrincium guanicense on *Argemone mexicana* in the Dominican Republic, 58; *Cladosporium guanicensis* renamed, 58.
Pomarsol, use of, against *Venturia inaequalis* on apple, 603.
Pomegranate (*Punica granatum*), *Melanconium fructicolum* on, in Ceylon, 655.
Pomelo, see Grapefruit.
Poplar (*Populus*), *Botryodiplodia penzigii* on, in Holland, 68.
—, *Cytospora* on, in N. America, 827; in U.S.A., 354.
—, *Fomes marginatus* on, note on, 144.
—, — *pinicola* can infect, 2.
—, *Linospora tetraspora* on, in Canada, 767.
—, *Marssonina populi* on, in Holland, 154; *Pseudopeziza populorum* perithecial stage of, 154.
—, *Melampsora* on, in U.S.A., 128.
—, *Nectria* on, in France, 68.
—, — *coccinea* and *N. galligena* on, in Holland, 68.
—, *Neofabraea populi* on, in Canada, 828; *Myxosporium* conidial stage of, 828.

[Poplar], 'pernicious canker' of, in France, 68.
—, *Phomopsis* on, in France, 68.
—, *Polyporus litschaueri* on, in U.S.S.R., 356.
—, *Poria andersonii* on, in U.S.A., 487.
—, *Pseudomonas rimaefaciens* on, in England and France, 68; in Holland, 67.
—, *Septoria musiva* on, in Canada, 770; *Mycosphaerella* perfect stage of, 771.
—, Sphaeropsid G 2191 on, in Italy, 639.
—, *Taphrina aurea* on, in the Argentine, 478.
—, *Ustulina vulgaris* can infect, 70.
—, *Venturia populina* on, in Italy, 639; *Pollaccia elegans* imperfect stage of, 639.
Poppy, see *Papaver*.
—, opium, see Opium poppy.
Populus, see Cottonwood, Poplar.
— *tremula* and *P. tremuloides*, see Aspen.
Poria on birch in U.S.A., 145.
— on *Cinchona* in Sumatra, 578.
— on tea in Sumatra, 579.
— on timber in England, 75.
— *andersonii*, differentiation of, from *Polyporus glomeratus*, 487.
— —, host range of, in U.S.A., 487.
— *calcea*, reaction of, to iodine, 645.
— *ferruginosa* on *Salix* in Alaska, 642.
— *hypobrunnea* on *Hevea* rubber in Ceylon, 655.
— *hypolateritia* on orange in Ceylon, 655.
— — on tea in Java, 629.
— *incrassata* on timber in U.S.A., 285.
— *obliqua* on birch in Sweden and U.S.S.R., 146.
— *vaillantii* on timber, effect of sap stain on resistance to, 829; factors affecting, 360, 493, 644; occurrence in Great Britain, 362; in U.S.A., 285; in U.S.S.R., 644; preferred as a name for *P. vaporaria*, 76; production of oxalic acid by, 426; specific reaction to, 221; toxicity of hydrogen sulphide to, 644; use of, for testing timber preservatives, 829; X-ray study on, 563.
— *vaporaria* on timber, see *P. vaillantii*.
— *xantha* on timber in Great Britain, 76, 362.
Portulaca grandiflora, *Sclerotium delphinii* can infect, 183.
— *oleracea*, (?) *Bacterium solanacearum* on, in Hawaii, 478.
—, *Cystopus portulacae* on, in Palestine, 275.
— —, *Sclerotium rolfsii* on, in U.S.A., 80.
Potash, see Fertilizers.
Potassium deficiency in coffee, 22.
— — in cotton in U.S.A., 24.
— — in fibre- and oil-yielding plants in Germany, 54.
(?) — — in tobacco in Mauritius, 374.
— —, relation of, to *Colletotrichum atramentarium* on potato, 88; to chlorotic streak of sugar-cane, 478; to cotton 'rust', 24; to leaf scorch of apple, 188; to marginal leaf scorch of currants, 39; to *Synchytrium endobioticum* on potato, 199; to *Urocystis tritici* on wheat, 791.
[Potassium] dichromate a constituent of fluoran O.G., 830.
— —, use of, against *Penicillium expansum* on apple, 441; as a timber preservative, 426, 830.
— permanganate, use of, against clover diseases, 115; against *Penicillium* and *Sporotrichum carnis* on eggs, 180.
— salts, effect of, on development of *Bacterium tumefaciens* tumours, 729.
Potato (*Solanum tuberosum*), *Actinomyces scabies* on, breeding against, 340; control, 90, 135, 200, 544, 612; factors affecting, 52, 429, 475, 505; genetics of resistance to, 200, 340; occurrence in Bermuda, 505; in Canada, 429; in Cyprus, 90; in Germany, 200, 340, 544; in Norway, 412; in U.S.A., 52, 136, 157, 200, 412, 475, 612; in U.S.S.R., 611; physiologic races of, 412; varietal reaction to, 52, 157, 200, 269, 340, 412, 612.
—, *Alternaria solani* on, control, 237; effect of, on yield, 340; factors affecting, 340; occurrence in Ceylon, 655; in Colombia, 12; in Germany, 340, 474; in U.S.A., 237; study on, 474.
—, (?) *Aplanobacter michiganense* on, in Canada, 201.
—, *Bacterium atrofaciens* on, in U.S.S.R., 378.
—, — *sepedonicum* on, control, 201, 613; notes on, 725, 788; occurrence in Canada, (?) 201, 725; in Norway, 412; in U.S.A., 53, 412, 612, 613, 758, 788; study on, 53; transmission of, by tubers, 412, 613.
—, — *solanacearum* on, control, 473, 788; epinastic response induced by, 789; factors affecting, 473; occurrence in Hawaii, 478; in Java, 814; in New S. Wales, 373; in U.S.A., 52, 473, 788; in Victoria, 279; physiology of, 279; study on, 279; transmission of, by soil, 478; varietal reaction to, 53, 814.
— 'black heart', 134.
— blue stem in U.S.A., 53.
—, boron deficiency in, in Holland, 269; in relation to leaf roll, 545.
—, 'boulage' of, in France, 372.
—, calcium deficiency in, in Holland, 545.
— canker in England, 201.
—, *Cercospora concors* on, in Bulgaria, 413.
—, chlorine deficiency in, 545.
— chlorosis, magnesium deficiency in relation to, in U.S.A., 201.
—, 'chocolate' disease of, in the Argentine, 338.
—, *Colletotrichum atramentarium* on, legislation against, (revised) in Java, 813; factors affecting, 88; occurrence in Denmark, 88; in Java, 813.
—, copper deficiency in, in Western Australia, 547.
—, *Corticium solani* on, control, 135, 544, 545, 577, 612; factors affecting, 52; note on, 815; occurrence in Colombia,

12; in Denmark, 88; in France, 372; in Germany, 544, 545; in Norway, 412; in U.S.A., 52, 136, 577, 612, 759, 815; in U.S.S.R., 611.
[Potato] crinkle in Australia, 656; in U.S.A., 337; in U.S.S.R., 611, 698; physiologic study on, 698; study on, 337; transmission of, by *Macrosiphum solanifolii, Myzus circumflexus, M. persicae,* and *M. pseudosolani,* 50; to tobacco, 51.
— degeneration, auxin content of tubers in relation to, 758; methods of determining, 134; occurrence in Germany, 50, 134. (See also mosaic of, virus diseases of, &c.)
— diseases in Holland, 269; suberin and suberized deposits in relation to, 475; varietal reaction to, 610.
—, 'Eisenfleckigkeit' of, in France, 476; in Germany, 50; varietal reaction to, 611. (See also internal rust spot of.)
—, *Erwinia phytophthora* on, in Norway, 412.
—, foliar necrosis virus of, a strain of potato virus X, 130.
—, *Fusarium* on, in Norway, 412.
—, — *coeruleum* in Scotland, 409.
—, — *oxysporum* on, in Jamaica, 92; in U.S.A., 52.
—, — *solani* var. *eumartii* on, in U.S.A., 52.
—, 'gloss disease' of, in Germany, 196.
—, 'hairsprout' of, identified with leaf roll, 757.
— hollow heart in Austria, 134.
—, internal rust spot of, in England, 201. (See also 'Eisenfleckigkeit' of.)
—, iron deficiency in, 545.
— latent mosaic, see Potato virus X.
— leaf roll, breeding against, 408, 410, 705; control, 131, 133; diagnosis of, 610; differentiation of, from boron, phosphorus, and zinc deficiencies, 545; effect of, on yield, 408; factors affecting, 578; 'hairsprout' identical with, 757; historical survey of, 757; net necrosis in relation to, 409, 788; occurrence in Belgium, 610; in China, 608; in England, 131; in Germany, 50, 133, 409, 705; in New S. Wales, 373; (?) in Peru, 411; in Scotland, 407, 408, 409; in U.S.A., 578, 757, 788; in U.S.S.R., 698; physiologic study on, 698; transmission of, by *Macrosiphum solanifolii* and *Myzus circumflexus,* 50; by *M. persicae,* 50, 131, 133, 578; by *M. pseudosolani,* 50; varietal reaction to, 132, 407, 409, 705; virus of, affecting Solanaceous weeds in England, 132.
— leaf-rolling mosaic in Germany, 50; in U.S.A., 337.
—, manganese deficiency in, in England, 295.
—, medullary browning of, in Austria, 134.
— mosaic, control, 377; diagnosis of, 610; effect of, on yield, 408; occurrence in Belgium, 610; in Germany, 50; in Holland, 411; in Scotland, 407, 408; in U.S.A., 337, 544, 578; in U.S.S.R., 377; study on, 337; transmission of, by *Macrosiphum solanifolii, Myzus circumflexus, M. persicae,* and *M. pseudosolani,* 50; to tobacco, 51; types of, 50; variation in, 411; varietal reaction to, 407, 544.
[Potato mosaic], rugose, in U.S.A., 578; in U.S.S.R., 377, 698; physiologic study on, 698; serological diagnosis of, 378; serological study on, 377.
— mycorrhiza in France, 341.
— net necrosis, see Potato leaf roll.
— nutritional disorders, Dutch monograph on, 545.
—, *Oospora pustulans* on, in Norway, 412.
— paracrinkle in U.S.A., 337.
—, *Phoma eupyrena* on, in Norway, 412.
—, phosphorus deficiency in, in relation to leaf roll, 545.
—, *Phytophthora erythroseptica* on, in Holland, 135.
—, — *infestans* on, biochemical study on, 758; breeding against, 135, 706; control, 51, 412, 728, 758; effect of, on yield, 411; factors affecting, 271, 707, 814; genetics of resistance to, 408; in relation to *Spongospora subterranea,* 611; nature of resistance to, 135, 271; occurrence in Bermuda, 505; in Eire, 758; in Estonia, 411; in France, 814; in Holland, 154; in Java, 814; in Norway, 411; in the Philippines, 444; in Scotland, 408; in Tasmania, 51; in U.S.A., 544, 728; in U.S.S.R., 135, 271, 611, 707; spray warnings against, 154; study on, 814; varietal reaction to, 51, 135, 269, 271, 408, 411, 412, 444, 544, 814.
—, — *parasitica* can infect, 742.
—, *Plasmodiophora solani* on, in relation to potato viruses, 140; occurrence in Hungary, 140.
—, *Puccinia pittieriana* on, in Colombia, 2.
—, purple top wilt of, in Canada, 725.
—, *Pythium aphanidermatum* on, in Southern Rhodesia, 632.
—, — *ultimum* can infect, 497.
—, reclamation disease of, copper deficiency in relation to, in Holland, 240.
—, *Rhizoctonia* on, in U.S.A., 77.
— ring spot virus, see Potato virus X.
—, *Sclerotinia sclerotiorum* on, in Colombia, 12.
—, *Sclerotium delphinii* can infect, 183.
— seed certification in England, Ireland, and Scotland, 132.
—, sodium deficiency in, 545.
— spindle tuber in Australia, 656; in China, 608; in Poland, 155; in U.S.A., 578.
—, *Spondylocladium atrovirens* on, in the Argentine, 478; in Norway, 412.
—, *Spongospora subterranea* on, control, 90; factors affecting, 378, 379; occurrence in Colombia, 12; in Cyprus, 90; in Madagascar, 11; in Norway, 412; in U.S.S.R., 611; *Phytophthora infestans* in relation to, 611; study on, 379; varietal reaction to, 611.

[Potato] spraing, factors affecting, 201; occurrence (?) in the Argentine, 338; in England, 201; in Germany, 50; varietal reaction to, 201.
—, stipple streak of, in Holland, 473; relation of, to potato virus Y, 337.
— streak, control, 133; diagnosis of, 610; occurrence in Belgium, 610; in Germany, 50, 133; serological diagnosis of, 378; transmission of, by *Myzus persicae*, 133.
—, *Synchytrium endobioticum* on, breeding against, 268, 706; control, 199, 506; genetics of resistance to, 200; legislation against, in Denmark, 704; in Latvia, 224; occurrence in Czechoslovakia, 139; in Denmark, 88; in Germany, 200, 704; in Holland, 268; in Norway, 412; in Poland, 199, 506, 707; varietal reaction to, 268, 707.
—, tobacco brown root rot can affect, 716.
—, tomato ring spot can infect, 657.
—, — spotted wilt affecting, in New S. Wales, 373.
—, — tip blight can infect, 420.
— veinbanding, see potato virus Y.
—, *Verticillium* on, 783; in Norway, 412.
—, vira-cabeça of, in Brazil, 202, 338; transmission of, by *Frankliniella*, 202; to tobacco and tomato, 202.
— virus diseases, control, 132, 133, 472; effect of altitude on, 338; legislation against, in Germany, 432; in S. Africa, 832; occurrence in France, 338; in Germany, 132, 133, 197, 472; in Norway, 412; in Peru, 410; *Plasmodiophora solani* in relation to, 140; Polish textbook on, 50; transmission of, by *Myzus persicae*, 132, 133, 197. (See also degeneration, mosaic, &c.)
— — A, breeding against, 408; control, 133; differentiation of, from potato virus Y, 472; occurrence in Australia, 656; in Germany, 50, 133; in Scotland, 407, 408; transmission of, by *Aphis rhamni*, 133; by *Myzus persicae*, 133; varietal reaction to, 407, 408.
— — B, *Datura stramonium* and tomato as test plants for, 410; occurrence in Peru, 411; in U.S.A., 337; potato virus X^u (?) identical with, 339.
— — C on potato in Peru, 411; in U.S.A., 337.
— — F and G on potato in Peru, 411.
— — X, a component of tomato streak (mixed-virus), 484, 783.
— — — on *Nicotiana glutinosa*, X-bodies in, 378.
— — — — on potato, breeding against, 408, 706; control, 377; detection of, 339, 810; differentiation of, by the gold sol reaction, 543; double stream refraction of, 763; foliar necrosis virus a strain of, 130; genetics of resistance to, 544; immunization against, 130; inactivation of, by chemicals, 266, 714; infectivity of, 378; inhibition of, by juice of *Aceratagallia sanguinolenta*, 540; intracellular inclusions caused by, 416; occurrence in Australia, 656; in Germany, 50, 133, 706; in Peru, 411; in Scotland, 407, 408; in U.S.A., 337, 703; in U.S.S.R., 377; properties of 44, 143, 378; serological study on, 378; strains of, 129, 409, 543; studies on, 129, 266, 337; on proteins of, 44, 61, 269, 703, 715; transmission of, to *Amaranthus retroflexus*, 337; varietal reaction to, 407, 408.
[Potato virus X] on Solanaceous weeds in England, 132.
— — X^u (?) identical with potato virus B in Germany, 339.
— — Y on potato, breeding against, 408, 410, 705; control, 131; differentiation of, from potato virus A, 472; inactivation of, by chemicals, 266; occurrence in Australia, 656; in England, 131; in France, 233; in Germany, 50, 409, 705; in Holland, 473; in Scotland, 407, 408; in U.S.A., 337; in U.S.S.R., 378; properties of, 60, 378; studies on, 337, 473; transmission of, by *Myzus persicae*, 131, 233, 473; by tuber grafting, 473; varietal reaction to, 132, 409, 473, 705, 813.
— — — on Solanaceous weeds in England, 132.
— — Z in Germany, 50.
— witches' broom in China, 608; in Poland, 155.
— yellow dwarf, host range of, 270; inhibition of, by juice of *Aceratagallia sanguinolenta*, 540; occurrence in U.S.A., 270; properties of the virus of, 270; transmission of, by *Aceratagallia sanguinolenta*, 270.
— 'yellow spotting' in Germany, 339.
—, zinc deficiency in, in relation to leaf roll, 545.
Primula, *Pythium megalacanthum* on, in Holland, 154.
— *sinensis* mosaic in China, 608.
Privet (*Ligustrum*), *Glomerella cingulata* on, in U.S.A., 11.
—, *Microsphaera alni* on, in Canada, 726.
Proteomyces synonym of *Trichosporon*, 525.
— *variabilis* on man in Java, 27.
Protexol injury, 518.
Protomyces theae renamed *Rhizophagus theae*, 470.
Prune, see Plum.
Prunus mosaic, elimination of, from Czechoslovakia, 464; geographical distribution of, 189; types of, 189.
—, *Puccinia pruni-spinosae* on various species of, in U.S.A., 744.
—, *Taphrina* on, species of, in N. America, 414.
— virus 7, plum broad-striped variegation virus named, 189.
— — 7a, plum narrow-striped variegation virus named, 189.
— *amygdalus*, see Almond.
— *armeniaca*, see Apricot.
— *avium*, see Cherry.
— *cerasifera*, see *P. divaricata*.
— *cerasus*, see Cherry.

[*Prunus*] *demissa*, X-disease of peach virus affecting, in U.S.A., 402.
— *divaricata*, leaf curl of, in Austria, 323.
— —, mosaic of, in Bulgaria, 189, 746.
— —, *Pseudomonas mors-prunorum* on, in Denmark, 88.
— —, variegation in, in Bulgaria, 188, 745.
— *domestica*, see Plum.
— *mahaleb*, mosaic and variegation of, in Bulgaria, 189.
— *pennsylvanica*, *Nectria coccinea* on, in U.S.A., 558.
— *persica*, see Nectarine, Peach.
— *serotina*, *Puccinia pruni-spinosae* on, in U.S.A., 322.
— *spinosa* mosaic in Bulgaria, 189.
— —, variegation of, in Bulgaria, 188.
— *virginiana*, X-disease of peach affecting, in U.S.A., 39, 401.
Psalliota campestris, see Mushrooms.
Pseudobalsamia microspora in mushroom beds in England, 295.
Pseudococcus injury to strawberry in relation to crinkle, 747.
Pseudomonas, definition of the genus, 659.
— *begoniae* on begonia in U.S.A., 740; *Bacterium flavozonatum* synonym of, 740.
— *campestris* on kale in U.S.A., 565.
— — on *Matthiola incana* var. *annua* in New S. Wales, 398.
— — on swedes and turnips in New Zealand, 234.
— *carotae* on carrot in Canada, 725.
— *cerasi* on apricot and cherry in U.S.A., 689.
— — on plum in U.S.A., 689, 690.
— — on stone fruits in U.S.A., 689.
— *citri* on citrus, eradication of, from S. Africa, 103, 438; occurrence in Dutch E. Indies, 794.
— — on lime in India, 234; in Malaya, 504.
— *citriputeale* on citrus in U.S.S.R., 671.
— — on lemon and orange, bacteriophage of, 445; occurrence in U.S.S.R., 445.
— *fluorescens* on clover in U.S.A., 554.
— — on tobacco, *Bact. tabacum* a variant of, 764; occurrence in U.S.A., 553, 764.
— *fraxini*, host range of, 825.
— — on ash, *Bacterium savastanoi* var. *fraxini* renamed, 560; occurrence in England, 825; in Yugoslavia, 560.
— *mors-prunorum* on cherry, control, 461, 746; occurrence in Denmark, 88; in England, 122, 461, (?) 654, 689; in Holland, 153; in New S. Wales, 746; study on, 122; varietal reaction to, 461.
— — on plum in Denmark, 88; in England, 654, 689; in Holland, 153.
— — on *Prunus divaricata* in Denmark, 88.
— *ovalis* on *Phaseolus lunatus*, (?) identical with *Achromobacter coadunatum*, 227; occurrence in U.S.A., 227.
— *pisi* on pea in New S. Wales, 501; in U.S.A., 777.
— *prunicola* on cherry in England, 122, 689.
[*Pseudomonas*] *rimaefaciens* on poplar in England and France, 68; in Holland, 67.
— *savastanoi*, host range of, 825.
— — on ash in Czechoslovakia, 490.
— — on olive in Portugal, 825; in U.S.A., 262, 330.
— *spongiosa* on cherry and plum in Holland, 153.
— *syringae*, *Bacterium matthiolae* (?) a synonym of, 257.
— — can infect *Matthiola incana* var. *annua*, 257.
— — on citron in Crete, 672.
— — on lilac in Holland, 154.
Pseudomycoderma a subgenus of *Geotrichum*, 28.
Pseudoperonospora cubensis, list of plants susceptible to, 86.
— — on cucumber in Japan, 86.
— — on *Luffa acutangula* in Ceylon, 655.
— — on squash in the Dominican Republic, 58.
— *humuli* on hops, control, 236, 818; factors affecting, 818; occurrence in England and Scotland, 818; in Switzerland, 139; in U.S.A., 236.
Pseudopeziza medicaginis on lucerne in U.S.S.R., 397.
— *populorum* the perithecial stage of *Marssonina populi*, 154.
— *ribis* on currants in England, 746.
— — on *Ribes*, method of testing resistance to, 402.
Pseudostemphylium a subgenus of *Stemphylium*, 141.
Pseudothyridaria moroides on *Rubus pinnatus* in S. Africa, 819.
Pseudotsuga taxifolia, *Alternaria tenuis* and *Botrytis cinerea* on, in Holland, 358.
— —, *Diplodia pinea* on, in U.S.A., 643.
— —, *Fomes annosus* on, in Denmark, 772.
— —, — *pini* on, in U.S.A., 644.
— —, *Fusarium orthoceras* and *F. solani* on, in Holland, 358.
— —, *Phaeocryptopus gaeumanni* on, in Canada, 425; in Denmark, 826; in Eire, 425; in Germany, 75, 425; in N. America, 827; in Scotland, 425; in Switzerland, 490; in U.S.A., 425; varietal reaction to, 826.
— —, *Phomopsis lokoyae* on, in N. America, 827.
— —, — *pseudotsugae* on, in Czechoslovakia, 490.
— —, *Pythium artotrogus* on, in Holland, 358.
— —, *Rhabdocline pseudotsugae* on, in Czechoslovakia, 490; in Germany, 3; in N. America, 827.
Psidium guajava, see Guava.
Pteridium aquilinum, *Ascochyta pteridis* on, in Austria, 57.
Puccinia on barley in India, 511.
— on wheat, dissemination of, in India, 511; overwintering of, 167.
—, review of work on, 164.
— *allii* on *Allium ampeloprasum* and onion in Palestine, 204.

[*Puccinia*] *andropogonis* on *Andropogon furcatus* and *A. scoparius* in U.S.A., 11.
— *anomala*, *Darluca filum* can infect, 581.
— — on barley, breeding against, 239; factors affecting, 666; occurrence in Australia, 239; in England, 387; in India, 90; in Portugal, 387, 666; in Spain, 387; in U.S.A., 388; physiologic races of, 239, 387, 666; varietal reaction to, 388, 666.
— — on *Ornithogalum umbellatum*, physiologic races of, 387.
— *antirrhini* on *Antirrhinum majus*, control, 457; effect of, on host, 128; occurrence in Bulgaria, 413, 712; in Palestine, 11, 204; in Poland, 457; in Rumania, 740; in U.S.A., 128; studies on, 457, 740; varietal reaction to, 457.
— *arachidis* on groundnut in Venezuela, 141.
— *asparagi* on asparagus, *Botrytis cinerea* in relation to, 778; control, 292, 649, 779; *Darluca filum* parasitizing, in England, 778; occurrence in England, 778; in Germany, 292, 649.
— *coronata* on oats, breeding against, 99, 239, 242, 447; *Darluca filum* can infect, 581; factors affecting, 306, 447, 793; infection period of, 389; longevity of uredospores of, 306; occurrence in Australia, 239; in Canada, 724; in U.S.A., 99, 157, 242, 793; in U.S.S.R., 389, 447; overwintering of, 447; physiologic races of, 239, 242, 794; *Rhamnus cathartica* in relation to outbreaks of, 724; varietal reaction to, 99, 157, 242, 447, 794.
— *glumarum* on *Agropyron repens* in Germany, 168, 734.
— — on barley in Bulgaria, 734; in Germany, 168, 734; in U.S.A., 583; overwintering of, 168; physiologic races of, 734; varietal reaction to, 584.
— — on cereals, physiologic races of, in U.S.A., 296.
— — on rye in Italy, 580; in U.S.A., 583.
— — on wheat, breeding against, 447; factors affecting, 95, 168, 447, 513; genetics of resistance to, 584; influence of *Tilletia caries* on resistance to, 300; nitrogen content in relation to, 300; occurrence in the Alps, 734; in the Argentine, 584; in Bulgaria, 734; in Cyprus, 90; in Germany, 168, 512, 734; in India, 90; in Italian E. Africa, 95; in Italy, 580; in Japan, 734; in U.S.A., 583; in U.S.S.R., 447; overwintering of, 168; physiologic races of, 512, 734; toxins in the host inhibiting, 791; varietal reaction to, 90, 95, 447, 512, 584.
— —, wheat × rye hybrids immune from, 661.
— *graminis* can infect rye, 383.
— —, *Darluca filum* can infect, 581.
— — on *Agropyron repens* in Germany, 383.
— — on barberry, eradication against, 165, 661; occurrence in U.S.A., 165.
— — on barley, genetics of resistance to, 388; occurrence in Denmark, 88; in Germany, 383; in U.S.A., 388; varietal reaction to, 388.
[*Puccinia graminis*] on cereals, barberry eradication in relation to, in Austria 661.
— — on oats, breeding against, 99; effect of light on, 793; occurrence in Denmark, 88; in Germany, 383, 730; in New S. Wales, 656; in U.S.A., 99; physiologic races of, 730; varietal reaction to, 99, 656.
— — on wheat, barberry eradication against, 165; breeding against, 239, 242, 447, 660, 731; brown necrosis caused by, 662; chemical composition of straw in relation to resistance to, 382; control, 439; effect of, on seed, 513; on yield, 88, 374, 660; factors affecting, 94, 95, 165, 239, 447, 793; genetics of resistance to, 169; losses caused by, 94; occurrence in Abyssinia, 507; in Australia, 239; in Canada, 165, 513, 724; in Cyprus, 90; in Denmark, 88; in Germany, 383, 730; in India, 90; in Italian E. Africa, 95; in Italy, 580; in Kenya, 439; in New S. Wales, 169, 656; in New Zealand, 239; in Poland, 661; in U.S.A., 94, 165, 169, 239, 242, 254, 374, 660, 730; in U.S.S.R., 447; overwintering of, 94, 239; physiologic races of, 94, 169, 239, 383, 507, 661, 730; *Pythium* root rot in relation to, 165; varietal reaction to, 90, 94, 95, 165, 169, 242, 439, 447, 656, 660, 661, 724, 730.
— —, wheat × rye hybrids immune from, 661.
— *helianthi* on sunflower in U.S.A., 128.
— *iridis* on *Iris* in U.S.A., 128.
— *kamschatkae* synonym of *Teloconia rosae*, 711.
— *kuehnii* on sugar-cane (?) in Egypt, 625; in the Philippines, 626.
— *lolii*, see *P. coronata*.
— *maydis* on *Euchlaena mexicana* in U.S.A., 374.
— — on maize, genetics of resistance to, 670; occurrence in Palestine, 204; in U.S.A., 374.
— *pittieriana* on potato in Colombia, 12.
— *polyspora* on *Tripsacum laxum* in Venezuela, 141.
— *pruni-spinosae* on apricot in U.S.A., 745.
— — on cherry in U.S.A., 375.
— — on nectarine in Australia, 190.
— — on peach in Australia, 190; in U.S.A., 745.
— — on plum, 190, 259; effect of, on host, 128; occurrence in Australia, 190; in U.S.A., 128, 745; in Yugoslavia, 259.
— — on *Prunus* spp. in U.S.A., 744.
— — on *Prunus serotina* in U.S.A., 322.
— *purpurea* on sorghum on Italy, 517; in U.S.A., 375.
— *rosae* renamed *Trolliomyces rosae*, 59; synonym of *Teloconia rosae*, 711.
— *schedonnardi* on cotton, *Muhlenbergia*, and *Sporobolus* in U.S.A., 392.

[*Puccinia*] *scolymi* on *Scolymus hispanicus* in Palestine, 204.
— *secalina*, *Darluca filum* can infect, 581.
— — on rye in U.S.S.R., 587.
— *triticina* on cereals in U.S.S.R., 39.
— — on wheat, breeding against, 384, 447, 660; control, 95, 375; effect of light on, 471, 793; on yield, 660, 663, 724; factors affecting, 95, 447, 471, 509, 584, 663, 731; genetics of resistance to, 384, 790; infection period of, 383; nitrogen content in relation to, 300; occurrence in Australia, 95; in Canada, 724; in Cyprus, 90; in Germany, 509, 731; in India, 90; in Italian E. Africa, 95; in Italy, 580; in Japan, 790; in Libya, 507; in Poland, 168; in U.S.A., 375, 384, 660, 663; in U.S.S.R., 447, 584, 585; physiologic races of, 507, 509, 585, 731; *Tilletia caries* in relation to, 791; toxins in the host inhibiting, 791; varietal reaction to, 90, 95, 168, 384, 447, 509, 585, 660, 663, 724, 731, 790.
— —, wheat × rye hybrids immune from, 661.
— *tubulosa* on eggplant in the Philippines, 370.
Pucconiastrum epilobii on *Abies alba* in Czechoslovakia, 490.
— *myrtilli* on *Vaccinium* in Alaska, 643.
Pueraria in relation to *Fomes lignosus* on rubber, 341.
Pullularia on *Lolium perenne* in New Zealand, 186.
— on wheat in England, 809.
— *pullulans*, antagonism of, to *Pythium de Baryanum*, 47.
— — on cellulose pulp in Finland, 774.
— — on peas in U.S.A., 495.
— — on pine in U.S.A., 217.
— — on timber in U.S.A., 285.
Pulpwood, see Timber.
Pumilus medullae on vine in Germany, 294.
Pumpkin, see Vegetable marrow.
Punica granatum, see Pomegranate.
Pyracantha angustifolia, *Erwinia amylovora* can infect, 684.
Pyrausta nubilalis, use of Métalnikov's bacilli to control, 379.
Pyrenochaeta on rice in Burma, 155.
— *sacchari* on sugar-cane in Brazil, 346, 624.
Pyrethrum, see *Chrysanthemum cinerariaefolium*.
Pyrola, *Chrysomyxa pyrolae* on, in Alaska, 643.
— *rotundifolia*, *Chrysomyxa pyrolae* on, in India, 59.
Pyrus, *Asteroma mali* on, in Austria, 57.
—, species of, immune from *Venturia inaequalis* and *Podosphaera leucotricha*, 507.
— *communis*, see Pear.
— *malus*, see Apple.
Pythium, inhibition of growth of, by fungicides, 440.
— on beet in England, 646; in U.S.A., 76.
(?) — on clover in Germany, 116.
— on *Colocasia esculenta* in Hawaii, 657.
[*Pythium*] on cotton in U.S.A., 25, 787.
— on *Foeniculum vulgare* in Italy, 203.
— on *Hevea* rubber in Malaya, 342.
— on maize in U.S.A., 618; *Trichoderma* antagonistic to, 618.
— on oats in U.S.A., 158.
— on ornamentals in U.S.A., 181.
— on pansy in England, 802.
— on strawberry in England, 809; in U.S.A., 123.
— on sugar-cane in Egypt, 625; in U.S.A., 343, 618; *Trichoderma* antagonistic to, 618.
— on tobacco in Ceylon, 420.
— on tomato in U.S.A., 421.
(?) — on vegetable marrow in Italy, 203.
— on vegetables in U.S.A., 181.
— on *Viola* in England, 802.
— on wheat, effect of, on rust, 165; occurrence in Canada, 165, 515; root development in relation to, 515.
— *acanthicum* on watermelon in U.S.A., 650.
— *afertile* on cotton in the Sudan, 391.
— *anandrum* can infect watermelon, 651.
— — on rhubarb in U.S.A., 651.
— *aphanidermatum*, host range of, 781.
— — on melon in U.S.A., 781.
— — on pansy in Holland, 112.
— — on potato in Southern Rhodesia, 632.
— — on squash in U.S.A., 781.
— — on tobacco in Southern Rhodesia, 785.
— — on watermelon in U.S.A., 781.
— —, relationship of, to *P. butleri*, 6.
— *arrhenomanes*, homothallism in, 472.
— — on sorghum in Italy, 517; in U.S.A., 440.
— — on sugar-cane in U.S.A., 343.
— — on wheat, effect of salicylic aldehyde on, in Canada, 449.
— — var. *canadense* on cereals, review of work on, in Canada, 660.
— *artotrogus* on pine and *Pseudotsuga taxifolia* in Holland, 358.
— — on tomato in Hungary, 140.
— *butleri*, effect of thiamin on the growth of, 268.
— —, homothallism in, 472.
— — on beet in U.S.A., 6; relationship of, to *P. aphanidermatum*, 6.
— — on ginger in India, 89.
— *complectens*, homothallism in, 472.
— — on *Durio zibethinus* in Malaya, 264.
— *de Baryanum* can infect oats, 158.
— —, filtrate of *Pullularia pullulans* inhibits growth of, 47.
— — in soil in U.S.A., 157.
— — on beans in U.S.A., 291.
— — on beans, broad, in Germany and Holland, 831.
— — on beet, control, 566; factors affecting, 5; occurrence in Belgium, 79; in U.S.A., 5, 566, 776.
— — on *Begonia* in U.S.A., 113.
— — on cabbage in Germany, 720.
— — on grasses and lucerne, antagonism of micro-organisms to, 47.
— — on lupin, 832.

[*Pythium de Baryanum*] on pansy in Holland, 112.
— — on pea in Germany, 831.
— — on pine, control, 786; factors affecting, 561; occurrence in Holland, 358; in U.S.A., 561, 786.
— — on tobacco in Italy, 483; in Southern Rhodesia, 483.
— — on vine in Greece, 11.
— —, urea-forming enzyme of, 198.
— *dissotocum* on sugar-cane in U.S.A., 343.
— *gracile* on cotton in the Sudan, 391.
— *graminicolum* on sorghum in Italy, 517.
— — on sugar-cane (?) in the Philippines, 625; in U.S.A., 343.
— *helicoides* on watermelon in U.S.A., 650.
— *intermedium* on grasses, antagonism of micro-organisms to, 47.
— *irregulare* can infect oats, 158.
— (?) — on watermelon in U.S.A., 84.
— — and *P. mamillatum* on grasses, antagonism of micro-organisms to, 47.
— *megalacanthum* on chrysanthemum in Holland, 154.
— — on flax in Holland, 268.
— — on *Pelargonium* and *Primula* in Holland, 154.
— *myriotylum*, homothallism in, 472.
— *periplocum* on pear and watermelon in U.S.A., 650.
— *perniciosum* on pansy in Holland, 112.
— *proliferum* on cotton in the Sudan, 391.
— *splendens* on *Begonia* in U.S.A., 113.
— — var. *hawaiianum* on *Piper betle* in Malaya, 505.
— *torulosum*, homothallism in, 472.
— (?) — on *Abies grandis* and pine in Holland, 358.
— *ultimum*, host range of, 497.
— — on *Begonia* in U.S.A., 113.
— — on tobacco in Southern Rhodesia, 483; in U.S.A., 497.
— — on vegetable marrow and watermelon in U.S.A., 497.
— *volutum* on cereals, review of work on, in Canada, 660.
— — on grasses, antagonism of micro-organisms to, 47.

Quercus, see Oak.
Quince (*Cydonia vulgaris*), *Fabraea maculata* on, in the Argentine, 532; in U.S.A., 38.
—, *Penicillium expansum* on, in Bulgaria, 712.
—, *Pezicula* spp. can infect, 762.
—, — *plantarium* can infect, 507, 762.
—, *Podosphaera leucotricha* on, in England, 295.
—, *Sclerotinia cydoniae* on, in Bulgaria, 189.
Quinosol, use of, against *Plasmopara viticola* on vine and plum 'apoplexy', 508.

Rabbit, *Debaryomyces neoformans* can infect the, 676.
Radish (*Raphanus sativus*), *Aphanomyces raphani* on, in Canada, 725.
—, *Cystopus candidus* on, factors affecting, 228, 471.
—, damping-off of, in U.S.A., 440.
—, lime-induced abnormalities in, in Switzerland, 29.
—, *Matthiola incana* var. *annua* mosaic can infect, 459.
— mosaic, host range of, 427; occurrence in China, 608; in U.S.A., 427.
—, *Pseudoperonospora cubensis* can infect, 86.
—, virus disease of, in Germany, 811.
Radish, Chinese (*Raphanus sativus* var. *longipinnatus*), radish mosaic can infect, 427.
—, —, turnip mosaic can infect, 223.
Radish, oil (*Raphanus oleiferus*), potash deficiency in, in Germany, 54.
Ramularia on strawberry in Canada, 191.
— *armoraciae* on horse-radish in Germany, 365.
— *narcissi* synonym of *R. vallisumbrosae*, 598.
— *pastinacae* on parsnip in Bulgaria, 413.
— *vallisumbrosae* on narcissus in England, 598.
Rape (*Brassica napus* var. *oleifera*), *Alternaria brassicae* on, in Germany, 493.
—, *Hypochnus solani* var. *brassicae* can infect, 493.
— mosaic in China, 608.
—, potash deficiency in Germany, 54.
—, virus disease of, in Germany, 811.
Raphanus oleiferus, see Radish, oil.
— *sativus*, see Radish.
— — var. *longipinnatus*, see Radish, Chinese.
Raspberry (*Rubus*), *Byssochlamys fulva* on, in England, 191.
— (?) curl in U.S.S.R., 700.
— dwarf in U.S.S.R., 377, (?) 700.
—, *Elsinoe veneta* on, in the Argentine, 478; in England, 325.
— leaf curl in U.S.S.R., 377.
— — roll in U.S.S.R., 377, (?) 700.
— mosaic, breeding against, 747; occurrence in China, 608; in Holland, 402; in U.S.A., 190, 236, 325, 442, 747; in U.S.S.R., 377; physiology of, 325; transmission of, by *Amphorophora rubi*, 190; varietal reaction to, 190, 236, 442.
—, *Mycosphaerella rubi* on, in the Argentine, 478.
—, *Phragmidium rubi-parvifolii* on, in China, 553.
—, — *shensianum* on, in China, 552.
— streak in U.S.S.R., 377.
— yellows in U.S.S.R., 377, (?) 700.
Rat, *Blastocystis hominis* on the, in Germany, 676.
Ravenelia tephrosiicola on *Tephrosia* in Malaya, 505.
Rd 8521 and Rd 8522, use of, against *Puccinia graminis* on wheat, 439.
Reclamation disease, copper deficiency in relation to, 88, 163, 240, 241.

[Reclamation disease] of barley, in Holland, 240, 241; in S. Australia, 163.
— — of mangolds in Germany, 667.
— — of oats, control, 613, 667; occurrence in Germany, 667; in Holland, 240, 241, 613; in S. Australia, 163.
— — of pea, *Phalaris canariensis*, and potato in Holland, 240.
— — of rye in Germany, 667; in Holland, 240.
— — of wheat in Denmark, 88; in Holland, 240, 241; in S. Australia, 163.
Regressive changes in plants, 754.
Report from Amani, 373, 727; Argentine, 237; Australia, 656; Baarn, 557; Barbados, 623; Belgian Congo, 21; Berlin-Dahlem, 507; Bermuda, 505; Bombay, 437; British W. Indies, 623; Brooklyn, 587; Burma, 155; Canada, 724; Central Provinces and Berar, 372; Ceylon, 655, 713; Cheshunt, 783; Cyprus, 90; Delaware, 376; Denmark, 87; East Malling, 654; Empire Cotton Growing Corporation, 573; Fiji, 91; Florida, 788; Forest Products Research Laboratory, 75; Geisenheim, 509; Georgia, 236; Hawaii, 477, 657; Idaho, 296; India, 642; Iowa, 157, 243; Jamaica, 92; Java, 481, 554; Kentucky, 576, Kenya, 438; Long Ashton, 778; Madras, 88; Maine, 577; Mauritius, 374; Michigan, 237; Mysore, 233, 673; New Delhi, 499; New York, 236; New Zealand, 234; Nigeria, 434; N. Carolina, 787; Nyasaland, 103; Ohio, 785; Oklahoma, 375; Palestine, 11; Pennsylvania, 442; Philippines, 444; Puerto Rico, 375; Queensland, 274, 502; Rhode Island, 442, 727; Scotland, 408; Seale-Hayne, 653; Sierra Leone, 156; S. Africa, 437, 804; S. India, 821; Southern Rhodesia, 784; St. Lucia, 604; St. Vincent, 124; Sudan, 390; Sumatra, 765; Tanganyika, 21, 152; Texas, 439; Uganda, 575; Wageningen, 153; Washington, 440; Wye, 295; Zanzibar, 615.
Reseda alba, *Cystopus resedae* on, in Palestine, 275.
Resin as a spreader, 89.
Rhabdocline pseudotsugae on *Pseudotsuga taxifolia* in Czechoslovakia, 490; in Germany, 3; in N. America, 827.
Rhabdospora hortensis (?) identical with *Septoria pisi*, 413.
Rhacodiella castaneae on chestnut in Italy, 355.
Rhamnus cathartica, *Puccinia coronata* on, in Canada, 724.
— *frangula*, *Pezicula frangulae* on, in Germany, 762.
Rheum, see Rhubarb.
Rhinocladiella atrovirens on cellulose pulp in Finland, 774.
Rhinosporidium equi on the horse in India, 454.
(?) — *seeberi* on cattle and the horse in India, 454.
— — on man in the Argentine, 800; in India, 454; in Iran, 593; (?) in S. Africa, 29; in U.S.A., 454; in U.S.S.R., 593.
Rhizoctonia, antagonism of, to *Ophiobolus graminis*, 664.
—, inhibition of growth of, by fungicides, 440.
— on beans in U.S.A., 77.
— on beet in England, 646; in U.S.A., 76.
— on *Cinchona* in Sumatra, 729.
— on coffee in Tanganyika, 21.
— on cotton in the Sudan, 391.
— on groundnut in S. Africa, 438.
— on *Hevea* rubber in Java, 452.
— on legumes, forming mycorrhiza in Italy, 471.
— on lucerne and *Melilotus alba* in U.S.A., 77.
— on orchids, forming mycorrhiza in Mexico and U.S.A., 801.
— on potato in U.S.A., 77.
— on strawberry in England, 809; in U.S.A., 402.
— on tomato in U.S.A., 421.
— *bataticola*, see *Macrophomina phaseoli*.
— *borealis* on *Goodyera repens* var. *ophioides* and *Spiranthes gracilis*, forming mycorrhiza, in U.S.A., 801.
— *grisea* on sugar-cane in Puerto Rico, 617.
— *juniperi* on *Juniperus communis* in Sweden, 700.
— *lamellifera* on lucerne, 249.
— *monilioides* on orchid, forming mycorrhiza, in U.S.A., 802.
— *oryzae* on rice in U.S.A., 616.
— *solani* f. *paroketea* on cassava in the Dominican Republic, 58.
— — var. *ambigua* on clover and maize, immunization against, 543, 757.
— —, see also *Corticium solani*.
— *subtilis* var. *nigra* on orchid, forming mycorrhiza, in U.S.A., 802.
Rhizophagus on cotton, forming mycorrhiza, in Egypt and India, 796.
—, Phycomycetoid endophyte identified as, 470.
— *marattiacearum*, *R. populinus*, *R. theae*, taxonomy of, 470.
Rhizopogon luteolus on pine, forming mycorrhiza, in Sweden, 542.
— *roseolus*, effect of growth substances on, 542.
— — on pine, forming mycorrhiza, in Sweden, 542.
— *rubescens* on pine, forming mycorrhiza, in New Zealand, 406.
Rhizopus, longevity of species of, 703.
— on cereals, control, 93.
— on citrus in U.S.S.R., 671.
— *arrhizus* on apple in India, 500.
— — on tobacco in Southern Rhodesia, 632.
— *nigricans*, effect of zinc on, 337.
— — humidity in relation to, 610.
— — in soil in Scotland, 137.
— — on apple in England, 743.
— — on banana in Japan, 41.
— — on cherry in U.S.A., 691.
— — on peach in Canada, 535.
— — on peas in U.S.A., 495.
— — on strawberry in Canada, 191.

Rhododendron, Ovulinia azaleae on, in U.S.A., 742.
—, *Phytophthora cinnamomi* on, in U.S.A., 33.
—, *Sporocybe azaleae* on, in U.S.A., 682.
— *catawbiense*, toxicity of walnut roots to, 423.
Rhodotorula glutinis on wood pulp, factors affecting, 774; occurrence in Sweden, 198.
— *rubra*, symbiosis of *Mucor ramannianus* and, 232.
Rhubarb (*Rheum*), *Pythium anandrum* on, in U.S.A., 651.
Rhus glabra, Corticium galactinum on, in U.S.A., 321.
Rhynchochoris serratus transmitting *Nematospora coryli* on citrus, 795.
Ribes, Botryosphaeria ribis and *Botrytis cinerea* on, in France, 325.
—, *Cronartium ribicola* on, eradication against, 359; occurrence in U.S.A., 3, 562; specific reaction to, 3, 772.
—, *Nectria cinnabarina, Phragmodothella kelseyi*, and *Plowrightia ribesia* on, in France, 325.
—, *Pseudopeziza ribis* and *Sphaerotheca mors-uvae* on, method of testing resistance to, 402.
— *grossularia*, see Gooseberry.
— *petiolare, Cronartium ribicola* on, 149; in U.S.A., 216.
—, see also Currants.
Rice (*Oryza sativa*), *Bacterium oryzae* on, in U.S.S.R., 379.
—, 'black kernel' of, in U.S.A., 545.
—, chlorosis of, 702.
—, *Corticium sasakii* on, 617.
—, — *solani* on, in U.S.A., 616.
—, *Curvularia lunata* on, in U.S.A., 546.
— dwarf virus, retention of, by *Nephotettix apicalis* var. *cincticeps*, 613.
—, *Fusarium* on, in U.S.A., 546.
—, *Gibberella fujikuroi* on, control, 88; isolation of active principle from, 707; occurrence in India, 88; in Italy, 54; in Japan, 707.
—, *Helminthosporium sigmoideum* var. *irregulare* on, in U.S.A., 815.
—, *Leptosphaeria salvinii* on, in U.S.A., 815.
—, *Nigrospora* on, in U.S.A., 546.
—, — *oryzae* on, in India, 88.
—, *Ophiobolus miyabeanus* on, factors affecting, 155, 272; occurrence in Burma, 155; in Colombia, 12; in Japan, 272; in U.S.A., 546.
—, *Piricularia oryzae* on, cellulose decomposition by, 708; factors affecting, 88, 546; occurrence in Colombia, 12; in India, 88; in Italy, 580; in Japan, 546; varietal reaction to, 88.
—, *Pyrenochaeta* on, in Burma, 155.
—, *Rhizoctonia oryzae* on in U.S.A., 616.
—, *Tilletia horrida* on, in Portuguese India, 711.
—, *Trichoconis caudata* on, in U.S.A., 546.
—, *Ustilaginoidea virens* on, in Burma, 155.
Ricinus communis, Bacterium ricini on, in Uganda, 575.
— —, — *ricinicola* on, in U.S.S.R., 379.
— —,— *solanacearum* on, epinastic response induced by, 789.
— —, — *tumefaciens* on, effect of hormones on, 238; of potassium salts on, 729.
— —, *Phytophthora parasitica* var. *nicotianae* can infect, 419.
— —, potash deficiency in, in Germany, 54.
— —, *Sclerotium delphinii* can infect, 183.
Ring spot diseases, see under hosts.
Robinia pseud-acacia, Verticillium alboatrum on, in U.S.A., 67.
Roestelia cancellata on pear in Italy, 572.
Rose (*Rosa*), *Botrytis cinerea* on, in the Argentine, 295; in England, 783.
—, *Cercospora rosae* on, in Cyprus, 91.
—, — *rosicola* on, in the Dominican Republic, 58.
—, *Diaporthe umbrina* on, in U.S.A., 41.
—, *Diplocarpon rosae* on, control in U.S.A., 41, 440, 598.
—, *Diplodia* on, in U.S.A., 440.
—, *Griphosphaeria corticola* on, in England, 597; conidial stage of, referred to *Coryneum microstictum*, 598.
—, *Phragmidium* on, in U.S.A., 128.
—, — *mucronatum* on, in England, 184, 528; synonymy of, 275; *Tuberculina persicina* parasitizing, 528.
—, *Sphaceloma rosarum* on, in U.S.A., 112; *Gloeosporium rosaecola* identical with, 112.
—, — *pannosa* on, control, 465, 528, 598; factors affecting, 39, 681; occurrence in Germany, 528; in U.S.A., 463, 465, 598, 681; in U.S.S.R., 39.
—, *Teloconia rosae* on, synonymy of, 59, 711.
—, *Trolliomyces rosae* on, in India, 59; *Puccinia rosae* renamed, 59.
Rosellinia on tea in Malaya, 504.
— *arcuata* on *Cinchona* in Sumatra, 578.
— — on citrus in Dutch E. Indies, 794.
— — on *Indigofera dosua* in Ceylon, 713.
— — on tea in Sumatra, 579, 729.
— *bunodes* on *Cinchona* in Sumatra, 578.
— — on citrus in Dutch E. Indies, 794.
— — on tea in Sumatra, 579.
— *necatrix* on apple in Cyprus, 90.
Rosmarinus officinalis, Sclerotium delphinii can infect, 183.
Rossi-Cholodny method for the study of bacteriorrhiza, 128.
Rubber (*Hevea brasiliensis*), bark diseases of, control in Malaya, 816.
—, bark or foot rot of, in Sumatra, 729.
—, *Botryodiplodia theobromae* on, in Java, 579.
—, *Ceratostomella fimbriata* on, control, 729, 816; factors affecting, 341, 342; occurrence in Malaya, 341, 342, 816; in Sumatra, 729.

[Rubber] chlorosis in Ceylon, 655.
—, *Colletotrichum heveae* on, in Sumatra, 579.
—, *Corticium salmonicolor* on, in Malaya, 341, 342.
—, *Fomes lignosus* on, control, 136, 579, 728; effect of soil covers on, 341; factors affecting, 137; occurrence in Ceylon, 655; in Dutch E. Indies, 136, 137; in Java, 579, 728; in Malaya, 341; in Sumatra, 579, 728.
—, — *noxius* on, control, 728; factors affecting, 137; occurrence in Ceylon, 655; in Dutch E. Indies, 137; in Sumatra, 728.
—, *Fusarium* on, in Sumatra, 579.
—, *Ganoderma pseudoferreum* on, in Java and Sumatra, 579, 728.
—, *Helicobasidium compactum* on, in Java, 546.
—, *Helminthosporium heveae* on, in Ceylon, 655.
—, moulds on prepared, in Malaya, 272.
—, *Oidium heveae* on, control, 729, 816; factors affecting, 272, 816; occurrence in Ceylon, 816; in India, 500, 823; in Malaya, 272, 816; in Sumatra, 729.
—, *Phyllosticta heveae* on, in Sumatra, 579.
— *Phytophthora* on, in Malaya, 342.
—, — *palmivora* on, in Java, 579; in Malaya, 341.
—, *Polyporus rugulosus* on, (?) identical with *P. zonalis*, 452; occurrence in Java, 452.
—, — *zonalis* on, in Ceylon, 655.
—, *Poria hypobrunnea* on, in Ceylon, 655.
—, *Pythium* on, in Malaya, 342.
—, *Rhizoctonia* on, in Java, 452.
—, *Ustulina zonata* and *Xylaria thwaitesii* on, in Sumatra, 579.
Rubus, *Pezicula rubi* on, *Discosporiella phaeosora* conidial stage of, 761.
—, see also Blackberry, Dewberry, Raspberry.
— *idaeus*, see Raspberry.
— *loganobaccus*, see Loganberry.
— *occidentalis*, see Raspberry.
— *phoenicolasius*, *Corticium galactinum* on, in U.S.A., 321.
— *pinnatus*, *Pseudothyridaria moroides* on, in S. Africa, 819.
Rusts of British Honduras, 710; of Bulgaria, 712; of China, 552; of Eastern Asia, 204; of Palestine, 204; of Venezuela, 141.
Rutabaga (*Brassica napobrassica*), *Pythium ultimum* can infect, 497.
—, turnip mosaic can infect, 223.
Rye (*Secale cereale*), *Calonectria graminicola* on, in Sweden, 298, 516.
—, *Cercosporella herpotrichoides* on, in Denmark, 385.
—, *Claviceps purpurea* on, commercial production of, in Hungary, 314.
—, *Dilophospora alopecuri* on, in Germany, 586.
—, grey speck of, in Denmark, 88.
— mosaic in U.S.S.R., 297.
—, *Naucoria cerealis* on, in U.S.A., 164.
[Rye], *Ophiobolus graminis* on, in Denmark, 385.
—, *Puccinia glumarum* on, in Italy, 580; in U.S.A., 583; varietal reaction to, 584.
—, — *graminis* can infect, 383.
—, — *secalina* on, in U.S.S.R., 587.
—, reclamation disease of, copper deficiency in relation to, in Holland, 240; in Germany, 667.
—, *Sclerotinia borealis* on, in Sweden, 298.
—, — *graminearum* on, in U.S.S.R., 582.
—, *Scolecotrichum graminis* on, in U.S.S.R., 587.
—, *Typhula* and *T. itoana* on, in Sweden, 298.
—, *Urocystis occulta* on, in Poland, 166.
— × wheat hybrids, immune from rusts and smuts, 661.

Saanichton KS-resin spray, use of, against *Uromyces appendiculatus* on bean, 442.
Saccharomyces, effect of ultra-short radio waves on, 46.
— *cerevisiae* on wood pulp, 774.
— *fragilis*, *Candida pseudotropicalis* imperfect stage of, 525; *Mycocandida pinoysimilis* var. *citelliana* identical with, 525.
— *macedoniensis*, *Candida macedoniensis* var. *macedoniensoides* and *Monilia macedoniensis* referred to, 525.
Saccharomycetaceae associated with *Ips* and *Scolytus* in Poland, 488.
Saccharum officinarum, see Sugar-cane.
Safflower (*Carthamus tinctorius*), *Septoria carthami* on, in Bulgaria, 413.
Sainfoin (*Onobrychis sativa*), *Sclerotinia trifoliorum* on, 628.
Saissetia oleae, *Cephalosporium lecanii* on, 380.
Salamander, *Saprolegnia parasitica* on the, in Italy, 591.
Salicylic acid, effect of, on *Tilletia caries* on wheat, 167.
— aldehyde, effect of, on *Pythium arrhenomanes* on wheat, 449.
Salix, *Botryosphaeria ribis* on, in U.S.A., 486.
—, *Cytidia flocculenta* on, in Alaska, 643.
—, *Cytospora* on, in U.S.A., 354.
—, — *chrysosperma* on, in Alaska, 642.
—, *Favolus canadensis* on, in Alaska, 643.
—, *Fomes igniarius* on, in Alaska, 642.
—, *Fusicladium saliciperdum* on, in U.S.A., 827.
—, *Lentinus tigrinus* on, in Yugoslavia, 559.
—, *Melampsora bigelowii* on, in Alaska, 642.
—, *Nectria coccinea* can infect, 280.
—, *Pholiota adiposa* on, in Alaska, 643.
—, *Physalospora miyabeana* on, in U.S.A., 827.
—, *Poria andersonii* on, in U.S.A., 487.
—, — *ferruginosa* on, in Alaska, 642.
—, *Steccherinum ochraceum* on, in Alaska, 643.
—, *Trametes suaveolens* and *Valsa salicina* on, in Alaska, 642.

[*Salix*] *alba* var. *vitellina*, *Venturia chlorospora* on, in U.S.A., 70.
— *babylonica*, *Marssonina salicicola* on, in Holland, 154.
— *fragilis*, *Venturia chlorospora* on, in U.S.A., 70.
— *pentandra*, *Venturia chlorospora* on, resistance to, in U.S.A., 70.
— *repens*, *Coenococcum graniforme* forming mycorrhiza on, in Sweden, 701.
— *wallichiana*, *Melampsora salicis-wallichianae* on, in India, 59.
Salsify (*Tragopogon porrifolius*), *Cystopus cubicus* on, in Bermuda, 506.
Salsola kali-tenuifolia, beet curly top affecting, in U.S.A., 78.
— *pestifer*, beet curly top affecting, in U.S.A., 225.
Salt, see Sodium chloride.
Saltation in *Corticium solani*, 494.
—, see also Variation.
Salvia officinalis, boron deficiency in, in Java, 21.
Sandalwood (*Santalum album*), spike disease of, control, 138, 818; effect of host plants on, 819; losses caused by, 819; occurrence in India, 55, 138, 818, 819; study on, 55.
Sanoseed, use of, against seed-borne cotton diseases, 787.
Santobrite, composition of, 363.
—, use of, as a timber preservative, 363, 774.
Saperda tridentata in relation to *Ceratostomella ulmi* on elm, 771.
Saprolegnia on fish in India, 675.
— *ferax* on fish in U.S.A., 799.
— *parasitica* on fish in Italy, 591; in U.S.A., 799.
— — on the frog and salamander in Italy, 591.
Scabiosa, *Thielaviopsis basicola* on, in England, 724.
— *maritima* var. *atropurpurea*, cucumber virus 1 affecting, in Germany, 509, 803.
Scale insects, *Calonectria diploa* on, in Malaya, 504.
— —, *Septobasidium spongia* on, in the Dominican Republic, 58.
Scedosporium apiospermum on man in Algeria, 178.
Schizanthus retusus, *Bacterium fascians* can infect, 597.
Schizophyllum commune on *Diospyros discolor* in the Philippines, 490.
— — on persimmon in U.S.A., 537.
— — on sugar-cane in Brazil, 624.
— — on timber, cultural behaviour of, 360, 493.
Schizosaccharomyces, effect of, on tobacco mosaic virus, 349.
Schizoxylon microsporum on *Acer rubrum* and *A. saccharum* in U.S.A., 147.
Scilla bifolia, mycorrhiza of, 470.
— *verna*, *Ustilago vaillantii* on, in England, 724.
Scleroderma bovista on pine, forming mycorrhiza, in New Zealand, 406.
Sclerospora graminicola on *Agrostis alba* in Hungary, 140.
[*Sclerospora graminicola*] on *Setaria italica* and *S. viridis*, 174; in Hungary, 140.
— *philippinensis* on maize in the Philippines, 444.
— *sacchari* on sugar-cane, legislation against, in Japan, 432; occurrence in the Philippines, 625; in Queensland, 274, 549; varietal reaction to, 274, 549.
— *sorghi* on sorghum in Italy, 517.
Sclerotinia on apple in Denmark, 118; in Germany, 401.
— on cherry in Germany, 401, 534; in U.S.A., 691.
— on fruit trees in Italy, 460.
— on pear in Germany, 401.
— *borealis* on grasses, rye, and wheat in Sweden, 298.
— *bulborum* on hyacinth in England, 724.
— *carunculoides* on mulberry in U.S.A., 422.
— *convoluta* on *Iris* in Canada, 725.
— *cydoniae* on quince in Bulgaria, 189.
— *fructicola*, ascospore discharge of, induced by chemicals, 534.
— —, non-occurrence of, in Bulgaria, 190.
— — on apricot in U.S.A., 533, 690.
— — on cherry and nectarine in U.S.A., 533.
— — on peach, control, 535, 785; factors affecting, 535; occurrence in Canada, 535; in U.S.A., 120, 533, 785.
— — on plum in U.S.A., 603.
— —, toxicity of fungicides to, 443; of phenothiazine and its derivatives to, 806.
— *fructigena* on apple in Denmark, 119; in England, 743.
— — on cherry in Germany, 508.
— — on medlar in England, 654.
— — on pome and stone fruits in Bulgaria, 190.
— *gladioli* on gladiolus in Bulgaria, 712; in New Zealand, 726.
— *graminearum* on *Arrhenatherum avenaceum* in U.S.S.R., 582.
— — on cereals in U.S.S.R., 581, 582, 583.
— — on *Phleum pratense*, rye, and wheat in U.S.S.R., 582.
— *laxa*, ascospore discharge of, induced by chemicals, 534.
— —, effect of growth substances on, 336.
— — on almond in U.S.A., 533.
— — on apple in Bulgaria, 190.
— — on apricot, control, 120; occurrence in U.S.A., 120, 533, 690; varietal reaction to, 690.
— — on cherry, control, 461; occurrence in England, 461; in Germany, 508, 603; in U.S.A., 533; overwintering of, 508; varietal reaction to, 603.
— — on loquat in Greece, 10.
— — on nectarine in U.S.A., 533.
— — on peach in Brazil, 401; in U.S.A., 533.
— — on plum in Bulgaria, 190; in England, 461; in U.S.A., 534.
— *mespili* on medlar in Bulgaria, 189.
— *minor* on *Chrysanthemum cinerariaefolium* in U.S.S.R., 477.
— — on *Helianthus tuberosus*, 628.

[*Sclerotinia minor*] on tobacco in U.S.S.R., 477.
— *opuntiarum* on *Opuntia* in the Argentine, 478.
— *polyblastis* on *Narcissus* in England, 32; perfect stage of *Botrytis polyblastis*, 32.
— *pseudotuberosa* on chestnut in Italy, 572.
— *sclerotiorum*, ascospore discharge of, induced by chemicals, 534.
— — on broad bean in England, 295.
— — on carrot in Italy, 395.
— — on celery, host-parasite relationship of, 812; occurrence in U.S.A., 789.
— — on *Chrysanthemum cinerariaefolium* in U.S.S.R., 477.
— — on colza in Germany, 494.
— — on *Dipsacus fullonum* in U.S.S.R., 477.
— — on figs in Greece, 10.
— — on hemp in Germany, 494.
— — on hops, 628.
— — on opium poppy in U.S.S.R., 477.
(?) — — on pea in Holland, 153.
— — on potato in Colombia, 12.
— — on swedes, 628.
— — on tobacco and *Valeriana officinalis* in U.S.S.R., 477.
— — on vine in Greece, 10.
— *serica*, comparative study on, 628.
— *trifoliorum*, *Mitrula sclerotiorum* parasitizing, in Sweden, 299.
— — on carrot, 628.
— — on clover, factors affecting, 319; losses caused by, 318; occurrence in Germany, 318, 684; in Sweden, 299, 684; physiologic races of, 684; studies on, 318, 628; varietal reaction to, 684.
— — on lupin and *Medicago lupulina* in Sweden, 299.
— — on sainfoin and vetch, 628.
— — var. *fabae* on broad bean in England, 628.
Sclerotium on cereals in France, 372.
— *bataticola* sclerotial form of *Macrophomina phaseoli* (q.v.), 634.
— *cepivorum* on garlic in New S. Wales, 82.
— — on onion in England, 779; in New S. Wales, 82.
(?) — *costantini* on wheat in France, 372.
— *delphinii* on *Ajuga reptans*, host range of, 183; occurrence in U.S.A., 183.
— — on *Daphne odora* in U.S.A., 529.
— — on lily in Holland, 153.
— — on sorghum in Italy, 517.
— — on violet in England, 654.
— *rhizodes* on *Agrostis stolonifera*, confusion of, with *Typhula graminum*, 34; occurrence in Sweden, 34.
— — on *Agrostis tenuis* in Norway and Sweden, 34.
— — on *Calamagrostis lanceolata* in Sweden, 34.
— *rolfsii*, effect of ultra-violet rays on, 45.
— — on apple in U.S.A., 80.
— — on bean in U.S.A., 79.
— — on beet in U.S.A., 76.
— — on carrot in the Philippines, 444.
[*Sclerotium rolfsii*] on chilli in U.S.A., 79.
— — on cotton (?) in the Belgian Congo, 248; in U.S.A., 25.
— — on cowpea in U.S.A., 79.
— — on eggplant in the Philippines, 370; in U.S.A., 79.
— — on *Euphorbia preslii* in U.S.A., 80.
— — on groundnut in U.S.A., 788.
— — on *Lespedeza stipulacea* and oats in U.S.A., 79.
— — on *Paphiopedilum* in Java, 458.
— — on plantain in India, 233.
— — on *Portulaca oleracea* in U.S.A., 80.
— — on sugar-cane in Brazil, 624; in Colombia, 12; in the Philippines, 626.
— — on tomato in U.S.A., 79.
— —, perfect stage of, 233.
— *tuliparum* on crocus in England, 724.
Scolecotrichum graminis on rye in U.S.S.R., 587.
— *musae* on banana in Fiji, 92; (?) in Haiti, 328.
Scolymus hispanicus, *Puccinia scolymi* on, in Palestine, 204.
Scolytus, fungal associates of, in Poland, 488.
—, role of *Beauveria bassiana* in control of, 557.
— *multistriatus* transmitting *Ceratostomella ulmi*, 557, 772, 826.
— *praeceps*, *Spicaria anomala* associated with, on *Abies concolor*, 217.
— *scolytus* transmitting *Ceratostomella ulmi*, 557, 772, 826.
— *subscaber*, *Spicaria anomala* associated with, on *Abies concolor*, 217.
— *ventralis*, *Trichosporium symbioticum* associated with, on *Abies concolor*, 217.
Scopularia serpens synonym of *Leptographium serpens*, 488.
Scopulariopsis blochi on man in Japan, new variety of, 252.
— *danica* on the horse in Denmark, 315.
Scorzonera tau-saghyz, *Alternaria*, *Aspergillus*, *Brachysporium*, *Cladosporium*, *Epicoccum*, *Fusarium*, *Penicillium*, and *Torula* on, in U.S.S.R., 137.
Secale cereale, see Rye.
Seed-borne diseases, manual for the determination of, 265.
— —, relation of, to seed importation into U.S.A., 265.
— disinfection apparatus, 466, 515.
— — by dry heat treatment, 601.
— — in Germany, 12.
— dusting, method of measuring interfacial friction in, 404.
Semesan, use of, against damping-off of tomato, 421; against *Pythium de Baryanum* on beans, 291.
Senecio cruentus, see Cineraria.
— *elegans*, *Bremia lactucae* on, in Switzerland, 139.
— —, cucumber virus 1 on, in Germany, 509, 803.
— *vulgaris*, lettuce mosaic affecting, in England, 650.
Sepedonium, differentiation of, from *Histoplasma*, 457.

Septobasidium, monograph on the genus, 59.
— on *Achras sapota* in Ceylon, 655.
— on *Aspidiotus perniciosus* in the Argentine, 521.
— *saccardinum*, *Peziotrichum saccardinum* renamed, 521.
— *spongia* on orange and scale insects in the Dominican Republic, 58.
Septogloeum athrix (?) identical with *S. oxysporum*, 34; *Mastigosporium album* var. *athrix* renamed, 34.
— *medicaginis* synonym of *Stagonospora meliloti*, 320.
Septoria acicola on pine in Bulgaria, 413; in U.S.A., 360, (?) 786.
— *apii* on celery in Germany, 569; in U.S.A., 780.
— *apii-graveolentis* on celeriac in France, 367.
— — on celery, control, 291, 367, 722; occurrence in France, 367; in Tasmania, 291; in U.S.A., 722, 780; spore production by, 780.
— *armoraciae* on horse-radish in Germany, 365.
— *bromi* on *Bromus inermis* in U.S.A., 11.
— *bromigena* on *Bromus inermis* in U.S.A., 743.
— *calamagrostidis* on *Agrostis palustris* in U.S.A., 297.
— *carthami* on safflower in Bulgaria, 413.
— *citri* on citrus in U.S.S.R., 671.
— *dauci* on carrot in France, 779.
— *graminum* on *Brachypodium* in Europe and U.S.A., 297; status of, 297.
— *linicola*, see *Sphaerella linorum*.
— *lycopersici* on tomato in Brazil, 353; in U.S.A., 421.
— *musiva* on aspen and cottonwood in Canada, 771.
— —on poplar, *Mycosphaerella* perfect stage of, 771; occurrence in Canada, 770.
— *nodorum* on wheat in Holland, 240; in U.S.A., 661.
— *pisi* on pea, control, 239; (?) identical with *Rhabdospora hortensis*, 413; occurrence in Bulgaria, 413; in U.S.A., 237.
— *polyadelpha* on charlock in New S. Wales, 57.
— *trifolii* synonym of *Stagonospora meliloti*, 320.
— *tritici* on wheat, distinct from *S. graminum*, 297; occurrence in U.S.A., 297, 661.
Septoriella oleae on olive in Greece, 10.
Sequoia gigantea, *Coniophora puteana* on, in Scotland, 425.
Serological diagnosis of virus diseases, 378, 631, 698.
— differentiation of smut fungi, 162.
— studies on *Bacterium angulatum*, 553; on *Bact. medicaginis* var. *phaseolicola*, *Bact. mori*, and *Bact. puerariae*, 495; on *Bact. tabacum* and *Pseudomonas fluorescens*, 553.
Sesame (*Sesamum orientale*), (?) tobacco leaf curl affecting, in Sierra Leone, 157.
[Sesame], *Verticillium dahliae* on, in Uganda, 575.
Setaria italica, *Sclerospora graminicola* on, 174; in Hungary, 140.
— —, *Ustilago crameri* on, in China, 174.
— *viridis*, *Sclerospora graminicola* on, 174; in Hungary, 140.
— — var. *genuina*, *Corticium centrifugum* on, in Japan, 205.
Shaddock, see Grapefruit.
Sharlach red inducing tumours in *Kalanchoë daigremontiana*, 580.
Sheep, toxicity of *Claviceps paspali* on *Paspalum dilatatum* to, 460.
Shirlan, use of, against *Peronospora tabacina* on tobacco, 64; for preservation of textiles, 527.
— AG, use of, against *Cercospora musae* on banana, 92; against *Cladosporium fulvum* on tomato, 637; against *Fusarium*, *Gloeosporium*, and *Nigrospora sphaerica* on banana, 327; against moulds on food, 461; against moulds in eggs, 503; against *Scolecotrichum musae* and *Uromyces musae* on banana, 92.
— WS, use of, against moulds on food, 461.
Shorea robusta, *Fomes tricolor*, *Polyporus shoreae*, and *Trametes incerta* on, in India, 642.
Silkworms, *Beauveria bassiana* on, 521, 735.
Silver nitrate, use of, against *Ustilago avenae*, 17.
Sinningia speciosa, see Gloxinia.
Sirex gigas, *Stereum sanguinolentum* associated with, in England, 26.
Sitanion jubatum, *Tilletia caries* and *T. foetens* can infect, 732.
— —, *Ustilago hordei* and *U. nigra* can infect, 666.
Smuts, see Ustilaginales.
Soap as a spreader, 643.
Socony product 2295 A, use of, against *Botryodiplodia theobromae* and *Phytophthora palmivora* on rubber, 579; against *Ceratostomella fimbriata* on *Hevea* rubber, 729.
Sodium deficiency in potato, 545.
— abietate, use of, as a spreader, 598.
— arsenate, constituent of fluoran O.G., 830.
— —, use of, against *Phytophthora cactorum* on apple, 807; against sandal spike, 138; against *Sclerotinia laxa* on apricot, 120; as a timber preservative, 426.
— bicarbonate, use of, as a timber preservative, 364.
— carbonate, toxicity of, to *Penicillium digitatum* and *P. italicum* on citrus, 247.
— —, use of, against tobacco mosaic, 765; as a timber preservative, 364.
— chlorate, use of, against potato virus diseases, 472; for *Ribes* eradication, 359.
— chloride, effect of, on coffee, 22; on currants, 40.
— — injury to bananas in Canary Islands, 506.

[Sodium chloride], use of, against *Saprolegnia* on fish, 675.
— 2 - chloro - o - phenylphenolate, a constituent of dowicide P, 364.
— dichromate, use of, as a timber preservative, 830.
— dodecyl sulphate, action of, on tobacco mosaic virus, 210.
— fluoride, a constituent of fluoran O.G., 830; of osmolite timber preservative, 775.
— —, use of, against staining of wood pulp, 363; as a timber preservative, 426, 493, 563, 829.
— hypochlorite, toxicity of, to *Penicillium digitatum* and *P. italicum* on citrus, 247.
— —, use of, against *Phytophthora* on asparagus, 151.
— lauryl sulphate as a spreader, 42.
— lysalbinate as a spray constituent, 781.
— oleyl sulphate as a spreader, 42.
— ortho-phenylphenate, toxicity of, to *Penicillium digitatum* and *P. italicum* on citrus, 247.
— — and ortho-phenylphenol, use of, against *Penicillium digitatum* on citrus, 589.
— pentachlorophenate, a constituent of dowicide G and santobrite, 363.
— —, use of, as a timber preservative, 5.
— peroxide, use of, against *Phytophthora* on asparagus, 151.
— protalbinate, use of, as a spray constituent, 781.
— silicofluoride, use of, as a timber preservative, 425.
— sulphate, effect of, on currants, 40.
— tetrachlorophenate, a constituent of dowicide H, 363; of dowicide P, 364.
— thiocyanate, use of, in connexion with potato tuber disinfection, 136.
Soil acidity, beet injury caused by, 646.
— -borne fungal diseases, control of, 476.
— disinfection against *Actinomyces scabies* on potato, 544; against *Aplanobacter michiganense* on tomato, 234; against *Bacterium solanacearum* on tobacco, 554; against *Bact. tumefaciens*, 382; against *Corticium solani* on potato, 544; against damping-off, 332; against *Fusarium bulbigenum* var. *lycopersici*, 439; against *F. conglutinans* var. *callistephi*, 113; against *Plasmodiophora brassicae* on cabbage, 443; against *Pseudomonas campestris* on stocks, 398; against *Synchytrium endobioticum*, 199.
— — by formaldehyde, 770.
— fungi, effect of steam sterilization on numbers of, 708.
— —, plating method for estimating number of, 614.
— —, review of present knowledge on, 708.
— micro-organisms, antagonism of, to soil-borne parasites, 50.
— sterilization apparatus, 194, 708.
— — by heat against *Sclerotium rolfsii* on *Paphiopedilum*, 458.
[Soil sterilization] by hot water against damping-off, 332.
— — by steam against *Aplanobacter michiganense* on tomato, 234; against black leg of cabbage, 720; against *Phytophthora cryptogea* and *P. erythroseptica* on tulip, 184; against tomato streak, 484; effect of, on soil fungi counts, 708; new method for, 42.
Soja, see Soy-bean.
Solanum, tobacco mosaic can infect wild species of, 633.
— *caldasii* var. *glabrescens*, immune from *Actinomyces scabies*, 475.
— *capsicastrum*, tomato tip blight can infect, 420.
— —, *Verticillium* can infect, 783.
— *chacoense* and *S. commersonii* immune from *Actinomyces scabies*, 475.
— *dulcamara*, mycorrhiza of, note on, 470.
— —, potato leaf roll affecting, in England, 132.
— *jamesii* immune from *Actinomyces scabies*, 475.
— *maglia*, mycorrhiza of, in S. America, 341.
— *melongena*, see Eggplant.
— *nigrum*, potato viruses X and Y on, in England, 132.
— —, *Pseudoperonospora cubensis* can infect, 86.
— —, tobacco mosaic can infect, 633.
— —, — rosette affecting, in Southern Rhodesia, 347.
— —, tomato streak virus affecting, in Holland, 484.
— —, tomato tipblight can infect, 351.
— —, tomato woodiness on, in U.S.S.R., 699.
— *pruniforme*, *S. racemiflorum*, and *S. racemigerum*, *Didymella lycopersici* on, resistance to, 508.
— *tuberosum*, see Potato.
— virus 4, see Potato virus B.
Solbar, use of, against *Oidium tingitaninum* on citrus, 795.
Sonchus asper, lettuce mosaic affecting, in England, 650.
Sooty moulds, study on Australian, 627.
Sophia longipedicellata and *S. parviflora*, beet curly top affecting, attenuation of virus by passage through, 225; occurrence in U.S.A., 225.
Sorghum (*Sorghum vulgare*), *Aplanobacter stewarti* and *Ascochyta sorghina* on, in Italy, 517.
—, *Bacillus sorghi* on, in Italy, 518.
—, *Bacterium alboprecipitans*, *Bact. andropogoni*, *Bact. holci*, *Bact. holcicola*, and *Bact. rubrilineans* on, in Italy, 517.
—, — *vasculorum* on, 274, 625; in Italy, 517.
— blight in Italy, 518.
—, *Botryodiplodia sorghi*, *Cercospora longipes*, and *C. sorghi* on, in Italy, 517.
—, *Colletotrichum andropogonis* on, in Italy, 517.
—, — *falcatum* on, in U.S.A., 344.
—, — *graminicolum* and *Curvularia lunata* on, in Italy, 517.

[Sorghum], damping-off of, in U.S.A., 440.
—, *Fusarium* on, comparison of, with 'weak neck', 99.
—, — *avenaceum* and *Gibberella fujikuroi* on, in Italy, 517.
—, *Helminthosporium halodes* on, in Italy, 517.
—, — *turcicum* on, in Italy, 517; in S. Africa, 438.
—, *Macrophomina phaseoli* on, in Italy, 517; in U.S.A., 389.
— mosaic in Italy, 517.
—, *Phoma insidiosa* and *Phytomonas rubrisubalbicans* on, in Italy, 517.
—, *Puccinia purpurea* on, in Italy, 517; in U.S.A., 375.
—, *Pythium arrhenomanes* on, in Italy, 517; in U.S.A., 440.
—, — *graminicolum* on, in Italy, 517.
—, red leaf spot of, in Italy, 518.
—, 'red stripe' of, in Italy, 517.
—, *Sclerospora sorghi* and *Sclerotium delphinii* on, in Italy, 517.
—, *Sorosporium reilianum* on, in India, 373; in Italy, 517; transmission of, by soil, 373.
—, — *simii* and *Sphacelia sorghi* on, in Italy, 517.
—, *Sphacelotheca cruenta* on, in Italy, 517.
—, — *sorghi* on, control, 392; factors affecting, 170, 588; inoculations with, 373; occurrence in Egypt, 170; in Italy, 517; in the Sudan, 392; in U.S.A., 18, 588; physiologic races of, 18.
—, Storey's grass mosaic affecting, in Italy, 517.
— stripe in Italy, 517.
—, *Tolyposporium ehrenbergii* on, in Italy, 517.
—, — *volkensii* on, in E. Africa, 517.
—, *Ustilago bulgarica* and *U. sorghicola* on, in Italy, 517.
—, use of, as barrier against *Phymatotrichum omnivorum* on cotton, 590.
—, 'weak neck' disease of, in U.S.A., 99.
Sorghum (?) *bicolor* chlorosis in Italy, 588.
— *halepense*, *Bacterium vasculorum* can infect, 274, 625.
— —, *Colletotrichum falcatum* on, in U.S.A., 344.
— *sudanense*, see Sudan grass.
— *verticilliflorum*, *Bacterium vasculorum* can infect, 274, 625.
Sorosporium everhartii and *S. provinciale* on *Andropogon furcatus* in U.S.A., 11.
— *reilianum* on maize, (?) toxicity of, to man, 111.
— — on sorghum in India, 373; in Italy, 517.
— —, serological study on, 162.
— *simii* on sorghum in Italy, 517.
Soy-bean (*Glycine max*), *Ascochyta pinodella* on, in Germany, 832.
—, *Bacterium glycineum* on, in Bulgaria, 413.
—, — *phaseoli* var. *sojense* on, in India, 368; in U.S.S.R., 379.
[Soy-bean], *Corticium solani* on, 759; in Germany, 832.
—, *Fusarium* on, in Germany, 832.
—, — *oxysporum* on, in Germany, 832.
— mosaic in China, 608.
—, *Pisum* virus 3 can infect, 648.
—, *Pleosphaerulina sojaecola* on, in Germany, 292.
—, potash deficiency in, in Germany, 54.
—, tobacco brown root rot can affect, 716.
Spermophthora gossypii, host range of, 309.
— — on cotton, 308.
Sphacelia sorghi on sorghum in Italy, 517.
Sphaceloma, host range of, 59.
— *citri* on orange in the Dominican Republic, 58; synonymy of, 58.
— *rosarum* on rose, *Gloeosporium rosaecola* identical with, 112; occurrence in U.S.A., 112.
— *violae* on violet in New S. Wales, 373.
Sphacelotheca andropogonis on *Andropogon scoparius* in U.S.A., 11.
— *cruenta* on sorghum in Italy, 517.
— *hydropiperis* referred to *Ustilago*, 710.
— *sorghi* on sorghum, control, 392; factors affecting, 170, 588; inoculations with, 373; occurrence in Egypt, 170; in Italy, 517; in the Sudan, 392; in U.S.A., 18, 588.
Sphaerella circumvaga on lucerne in U.S.S.R., 398.
— *linicola*, *Mycosphaerella linicola* renamed, 112.
— *linorum* on flax, factors affecting, 315; occurrence in the Argentine, 112, 315, 595; in Rumania, 315; in U.S.A., 739; *Septoria linicola* imperfect stage of, 112; varietal reaction to, 739.
Sphaeria gleditschiae identical with conidial stage of *Physalospora obtusa*, 628.
Sphaeronema pruinosum conidial stage of *Pezicula pruinosa*, 761.
Sphaeropsid G. 2191 on poplar in Italy, 639.
Sphaeropsis on elm in U.S.A., 281, 354.
— *ellisii*, see *Diplodia pinea*.
Sphaerostilbe repens on cassava in Malaya, 504.
— — on lemon in Malaya, 504.
Sphaerotheca, host range of, 58.
— *humuli* on strawberry, control, 191, 325, 604; factors affecting, 191; genetics of resistance to, 692; occurrence in Canada, 191; in England, 325, 654; in Southern Rhodesia, 604; in U.S.A., 402, 693; varietal reaction to, 191, 693.
— — var. *fuliginea* on *Bidens tripartitus* and *Calendula officinalis* in U.S.S.R., 615.
— — — — on Cucurbitaceae, eggplant, *Emilia sonchifolia*, *Hibiscus mutabilis*, *Impatiens balsamina*, and *Lactuca indica* var. *dracoglossa* in Japan, 84.
— — — — on *Taraxacum officinale* in U.S.S.R., 615.
(?) — *mors-uvae* on gooseberry in U.S.S.R., 39.
— — on *Ribes*, method of testing resistance to, 402.

[*Sphaerotheca*] *pannosa* on peach in Cyprus, 90; in Egypt, 120; in Madagascar, 11; in U.S.A., 463.
— — on rose, control, 465, 528, 598; factors affecting, 39, 681; occurrence in Germany, 528; in U.S.A., 463, 465, 598, 681; in U.S.S.R., 39.
— *sorghi*, serological study on, 162.
Sphaerulina taxi on yew, *Cytospora taxifolia* in relation to, 74.
Spicaria anomala on *Abies concolor* in U.S.A., 217; *Scolytus* in relation to, 217.
— *fumosa-rosea*, penetration of chitin by, 380.
— *heliothis* on *Heliothis obsoleta* in U.S.A., 252.
Spinach (*Spinacia oleracea*), beet mosaic affecting, in Holland, 154.
—, — yellows can infect, 429.
—, *Colletotrichum spinaciae* on, in Denmark, 572.
—, cucumber virus 1 on, control, 648; occurrence in England, 647; in Germany, 509, 803; study on, 647.
—, (?) *Cystopus occidentalis* on, in U.S.A., 367.
—, damping-off of, in U.S.A., 440.
—, lime-induced abnormalities in, in Switzerland, 29.
—, *Matthiola incana* var. *annua* mosaic can infect, 459.
— mosaic in China, 608.
—, *Peronospora effusa* [as *P. spinaciae*] on, in Palestine, 275.
—, *Pythium ultimum* on, in U.S.A., 497.
—, radish mosaic can infect, 427.
Spiranthes gracilis, *Rhizoctonia borealis* on, forming mycorrhiza, in U.S.A., 801.
Spondylocladium atrovirens on potato in the Argentine, 478; in Norway, 412.
Spongipellis litschaueri renamed *Polyporus litschaueri*, 356.
Spongospora subterranea on potato, control, 90; factors affecting, 378, 379; occurrence in Colombia, 12; in Cyprus, 90; in Madagascar, 11; in Norway, 412; in U.S.S.R., 611; *Phytophthora infestans* in relation to, 611; study on, 379; varietal reaction to, 611.
Sporobolomyces salmonicolor var. *typicus* and *S. shibatanus* on timber in Italy, 524.
Sporobolus, *Puccinia schedonnardi* on, in U.S.A., 392.
Sporocybe azaleae on *Rhododendron* in U.S.A., 682.
Sporodesmium mucosum var. *pluriseptatum* on cucumber in Germany, 652.
Sporodinia grandis, humidity in relation to, 610.
Sporotrichum on man, 523.
— *beurmanni* on man in Algeria, 178.
— *carnis* on eggs in Northern Ireland, 180.
— *citri* synonym of *Sphaceloma citri*, 58.
— *gougeroti* on man in Brazil, 595.
— *narcissi* synonym of *Trichoderma viride*, 761.
Spray injury to peach, 536, 807.
Sprays, combined, notes on, 538.
—, physical properties of, 538.
—, water vapour as a carrier for, 333.
Spraying apparatus, 333, 380, 786.
Spreaders, tests of, 153.
Spruce (*Picea*), *Ascochyta piniperda* on, in Bohemia, 219.
—, *Cephalosporium pilifera* on, in Poland, 488.
—, *Ceratostomella coerulescens* on, in Poland, 488.
—, — *piceae* on, in Poland, 488.
—, *Chrysomyxa ledicola* on, in Alaska, 643.
—, — *weirii* on, in Canada, 725.
—, *Coenococcum graniforme* forming mycorrhiza on, 701.
—, *Coniophora* (?) *olivacea* on, in Norway, 559.
—, *Cytospora* on, in N. America, 827.
—, *Diplodia pinea* on, in U.S.A., 643.
—, *Fomes annosus* on, in Denmark, 772.
—, — *pini* on, in Alaska, 643; in Norway, 559.
—, — *pinicola* on, in Norway, 559; viability of, 2.
—, *Lophodermium macrosporum* on, in Scotland, 218.
—, mycorrhiza of, effect of secretions of, on host, 608; Hymeno- and Gasteromycetes forming, 541; occurrence in Sweden, 541, 608, 701.
—, *Peridermium coloradense* on, in Alaska, 643.
—, *Polyporus borealis* on, in Norway, 559.
—, — *tomentosus* var. *circinatus* on, in Norway, 559; *Pelloporus tomentosus* var. *circinatus* synonym of, 559.
—, *Stereum sanguinolentum* on, in England, 75; in Norway, 559.
—, *Thelephora laciniata* on, in Czechoslovakia, 490.
Squash (*Cucurbita*), little leaf of, in U.S.A., 43.
—, low temperature injury to, in U.S.A., 723.
—, *Pseudoperonospora cubensis* on, in the Dominican Republic, 58.
—, *Pythium aphanidermatum* on, in U.S.A., 781.
—, see also Vegetable marrow.
SS-3, use of, as a spreader, 440.
Stachybotrys alternans on wood pulp in Italy, 362.
— *atra* on paper in Italy, 696; *Stachybotrys alternans* and *S. lobulata* (?) identical with, 696.
— — var. *brevicaule* on paper in Italy, 696.
Stachylidium theobromae on banana in Haiti, 328.
Stachytarpheta, (?) tobacco leaf curl affecting, in Sierra Leone, 157.
Stagonospora curtisii on *Hippeastrum vittatum* in Denmark, 572.
— *iridis* on *Iris florentina* in Cyprus, 91.
— *meliloti* can infect *Melilotus*, 320.
— — on lucerne in U.S.A., 320.
— —, synonymy of, 320.
— *recedens*, *Phleospora trifolii* var. *recedens* renamed, 320.
Stecchericum ochraceum on *Salix* in Alaska, 643.

Stellaria media, cucumber virus 1 affecting, in Germany, 509, 803.
Stemphylium on cotton fabrics in New S. Wales, 726.
—, revision of the genus, 141.
—, *Thyrospora* synonym of, 141.
— *asperosporum* renamed *Acrospeira asperospora*, 141.
— *asperulum* on pine in Holland, 358.
— *botryosum* identical with *Macrosporium sarcinula*, 141.
(?) — — on clover, immunization against, 543, 757.
— —, *Thyrospora parasitica* synonym of, 141.
— *lanuginosum*, identity of, 141.
— *macrosporoideum* renamed *Acrospeira macrosporoidea*, 141.
— *radicinum*, *Alternaria radicina* renamed, 573.
— *quadratum* renamed *Tetracoccosporium quadratum*, 141.
— *sarcinaeforme* can infect clover and lucerne, 717.
— —, comparison of, with *Pleospora lycopersici*, 717.
— — on clover in Canada, 725; in England, 141; in U.S.A., 725; *Thyrospora sarcinaeforme* renamed, 141.
— — on lupin in Germany, 116.
— —, *Macrosporium sophorae* synonym of, 141.
Stereum frustulosum on timber, differential reaction of, to gallic and tannic acids, 360; factors affecting, 361.
— — orthographic variant of *S. frustulatum*, 275.
— *gausapatum* on oak in U.S.A., 718.
— *purpureum* on apple, apricot, and plum in Victoria, 744.
— — on timber, 360.
— *sanguinolentum* on conifers in Great Britain, 361.
— — on *Sirex gigas* in England, 26.
— — on spruce in England, 75; in Norway, 559.
— — on timber in Finland, 564; in Germany, 357.
— *subpileatum* on timber, differential reaction of, to gallic and tannic acids, 360.
Sterocide, use of, against seed-borne cotton diseases, 787.
Stevensea wrightii on *Opuntia amophila* in U.S.A., 404; *Perisporium wrightii* synonym of, 404.
Stigeosporium marattiacearum renamed *Rhizophagus marattiacearum*, 470.
Stigmatomycoses, annotated list of, in E. Africa, 309.
Stilbella parisitizing *Cordyceps* in England, 737; *Tilachlidiopsis nigra* in relation to, 737.
— *ramosa* (?) identical with *S. setiformis*, 737.
Stilbum cinnabarinum conidial form of *Megalonectria pseudotrichia*, 823.
Stock, see *Matthiola incana*.
Storage disorders of apple, 116, 118, 119, 187, 235, 259, 438, 443, 507, 510, 533, 657, 727, 743, 784, 806; of banana, 40, 747; of beans, 723; of beet, 76; of butter, 457, 595; of celery, 723; of cherry, 691; of chestnuts in Italy, 355; of chilli, 723; of citrus, 589, 671; of cucumber, 722; of eggs, 180, 503; of eggplant, 723; of foodstuffs, 460, 467; of fruit, 35; of ginger, 89; of grapefruit, 193, 805; of grapes, 804, 805; of lemon, 437, 673; of mango, 193; of mangosteen, 156; of meat, 255; of oil palm kernels, 503; of onion, 430, 501; of orange, 101, 102, 657, 805; of papaw, 193; of peach, 535, 804; of *Phaseolus lunatus*, 227; of pineapple, 503, 748; of plum, 804; of potato, 92, 134, 409, 505, 813; of preserved fruit, 191; of rubber, 272; of squash, 723; of tomato, 354; of vegetable marrow, 723; of vegetables, 35; of watermelon, 723.
Strawberry (*Fragaria vesca*), *Armillaria mellea* on, in U.S.A., 402.
—, *Aspergillus* (?) *fumigatus* on, in England, 191.
—, *Bacterium fascians* on, in Sweden, 317.
—, *Botrytis cinerea* on, in the Argentine, 295; in Canada, 191; in Japan, 430; in U.S.A., 402.
—, *Byssochlamys fulva* on, in England, 191.
— crinkle, control, 464, 537, 604; factors affecting, 537; occurrence in England, 326, 464; in Queensland, 537; in Southern Rhodesia, 604; in U.S.A., 402; resemblance of *Pseudococcus* injury to, 747; types of, 326; varietal reaction to, 402, 537.
—, *Dendrophoma obscurans* on, in U.S.A., 402.
—, *Diplocarpon earliana* on, in Canada, 191; in U.S.A., 402, 692; varietal reaction to, 692.
—, *Fusarium orthoceras* and *F. solani* on, in U.S.A., 40.
—, June yellows of, in Canada, 191; in U.S.A., 693.
—, *Macrophomina phaseoli* on, in U.S.A., 286.
— (?) mosaic in Canada, 191.
—, *Mycosphaerella fragariae* on, in Canada, 191; in the Philippines, 444; in U.S.A., 402; varietal reaction to, 444.
—, *Phytophthora* on, in England, 809; in U.S.A., 123.
—, *Pythium* on, in England, 809; in U.S.A., 123.
— 'red stele', see Strawberry, *Phytophthora* on.
—, *Rhizoctonia* on, in England, 809; in U.S.A., 402.
—, *Rhizopus nigricans* on, in Canada, 191.
— root rot, lists of fungi associated with, 191, 809.
—, *Sphaerotheca humuli* on, control, 191, 325, 604; genetics of resistance to, 692; occurrence in Canada, 191; in England, 325, 654; in Southern Rhodesia, 604; in U.S.A., 402, 693; varietal reaction to, 191, 693.

[Strawberry], *Verticillium* on, in England, 809; in U.S.A., 402.
—, witches' broom of, in U.S.A., 402.
— xanthosis in Canada, (?) identical with yellow edge, 464.
— yellow edge, control, 326, 537, 604; factors affecting, 537; (?) identical with xanthosis, 464; occurrence in England, 326, 464; in Queensland, 537; in Southern Rhodesia, 604; in U.S.A., 402; varietal reaction to, 326, 464, 537.
Streak diseases, see under hosts.
Strongyloïdes fülleborni, *Arthrobotrys oligospora* and *Dactylella bembicodes* can attack, 310.
Strongylus, action of predacious fungi on, 520.
Strumella corynoidea on oak in U.S.A., 280.
— — on timber in U.S.A., 356.
Stylopage araea, account of, 798.
— *hadra* in soil in France, 251.
— *rhynchospora* and *S. scoliospora* on decayed matter in U.S.A., 798.
Stysanus ulmi associated with *Scolytus* in Poland, 488.
Sudan grass (*Sorghum sudanense*), *Bacterium vasculorum* can infect, 274.
Sugar beet, see Beet.
Sugar-cane (*Saccharum officinarum*), *Aeginetia indica* on, in the Philippines, 626.
—, *Bacterium albilineans* on, factors affecting, 274; occurrence in Mauritius, 374; in the Philippines, 625; in Queensland, 274; varietal reaction to, 374.
—, — *rubrilineans* on, in Brazil, 619, 624; in Queensland, 274; in Uganda, 576; study on, 619; varietal reaction to, 274, 576, 619.
—, — *vasculorum* on, control, 623; host range of, 274, 374, 625; occurrence in Barbados, 623, 624; in Brazil, 619, 624; in Mauritius, 374, 625; in Queensland, 274, 624; varietal reaction to, 274, 619.
—, *Bakerophoma sacchari* on, in the Philippines, 625.
—, banded chlorosis of, in Brazil, 624.
—, *Botryodiplodia theobromae* on, in Brazil, 624.
—, *Caldariomyces fasciculatus* on, in Japan, 56; *Ceratovacuna lanigera* associated with, 56.
—, *Cephalosporium sacchari* on, in Egypt, 625; in India, 500; in the Philippines, 625; referred to *Gibberella fujikuroi* var. *subglutinans*, 500.
—, *Ceratostomella paradoxa* on, in Brazil, 624; in Egypt, 625; in the Philippines, 626.
—, *Cercospora kopkei* on, in Burma, 155, 500; in India, 500; in the Philippines, 626.
—, — *longipes* on, in Brazil, 624.
—, — *sacchari* on, in Uganda, 576.
—, — *vaginae* on, in Brazil, 624.
— chlorosis, forms of, 237; occurrence in the Argentine, 237; in Egypt, 625; in Puerto Rico, 376. (See also banded chlorosis of.)
— chlorotic streak, *Aphis sacchari* in relation to, 274; control, 478; factors affecting, 203, 478; occurrence in Hawaii, 478; in Queensland, 274; in U.S.A., 203; varietal reaction to, 204.
[Sugar-cane], *Claviceps* on, in the Philippines, 625.
—, *Cochliobolus stenospilus* on, see *Helminthosporium stenospilum* on.
—, *Colletotrichum falcatum* on, *Diatraea saccharalis* in relation to, 344; factors affecting, 344; nature of resistance to, 619; occurrence in the Argentine, 237; in Brazil, 619; in Egypt, 625; in the Philippines, 625; in U.S.A., 344, 619; varietal reaction to, 344, 619.
—, *Corticium solani* on, in the Philippines, 626; in U.S.A., 616.
—, *Cytospora sacchari* on, in India, 139; in U.S.A., 618.
—, dwarf disease of, in Queensland, 274; in U.S.A., 617.
—, Fiji disease of, control, 760; occurrence in the Philippines 625, 626; in Queensland, 274, 760; transmission of, by *Perkinsiella vastatrix*, 626, 709; varietal reaction to, 274.
—, *Fumago vagans* on, in Japan, 56; *Ceratovacuna lanigera* associated with, 56.
—, *Fusarium* on, in Egypt, 625.
—, *Gibberella fujikuroi* on, in Brazil, 624; in Burma, 155; in the Philippines, 626.
—, *Gnomonia iliau* on, in Brazil, 624.
—, *Helminthosporium sacchari* on, in Brazil, 624; in Egypt, 625; in Jamaica, 92; in the Philippines, 626.
—, — *stenospilum* on, in Brazil, 624; in Hawaii, 477.
—, *Hendersonina sacchari* on, in India, 307; resemblance of, to *Diplodia zeae*, 307.
—, *Himantia* on, in Egypt, 625.
—, — *stellifera* in Brazil, 346; in Egypt, 625.
—, *Hypocapnodium* on, in Japan, 56; *Ceratovacuna lanigera* associated with, 56.
—, *Leptosphaeria sacchari* on, in Brazil, 624; in Egypt, 625; in the Philippines, 625.
—, *Marasmius* on, in Egypt, 625; in the Philippines, 626.
—, — *sacchari* on, in Brazil, 624; in Egypt, 625.
—, *Meliola arundinis* on, in the Philippines, 625.
— mosaic, bacterial cyclostage in relation to, 500; breeding against, 623, 624; control, 144, 621, 623; factors affecting, 346; legislation against, in Colombia, 144; occurrence in the Argentine, 346; in Barbados, 623; in Brazil, 346, 619, 624; in British Guiana, 346; in British West Indies, 623, 624; in Colombia, 12, 56; in Egypt, 625; in Hawaii, 478, 622; in India, 89, 500, 622; in Java, 346; in the Pacific Islands, 622; in the Philippines, 625; in Puerto Rico, 622, 760; in Spain, 622; in Uganda, 576; in U.S.A., 621; in the West Indies, 622; strains of, 500; studies on, 621, 623;

transmission of, by *Aphis maidis*, *Carolinaia cyperi*, and *Hysteroneura setariae*, 761; types of, 621, 622; varietal reaction to, 89, 346, 500, 619, 621, 622, 623; virus of, affecting sorghum in Italy, 517.
[Sugar-cane], *Myriogenospora aciculisporae* on, in Brazil, 624.
— pathogens, annotated list of, 203.
—, *Pleocyta sacchari* on, in Brazil, 624; in Egypt, 625; in the Philippines, 625; in Queensland, 274; varietal reaction to, 274.
—, *Puccinia kuehnii* on, (?) in Egypt, 625; in the Philippines, 626.
—, *Pyrenochaeta sacchari* on, in Brazil, 346, 624.
—, *Pythium* on, factors affecting, 618; occurrence in Egypt, 625; in U.S.A., 343, 618; *Trichoderma* antagonistic to, 618.
—, — *arrhenomanes* and *P. dissotocum* on, in U.S.A., 343.
—, — *graminicolum* on, (?) in the Philippines, 625; in U.S.A., 343.
—, *Rhizoctonia grisea* on, in Puerto Rico, 617.
— root rot in Brazil, 346; *Himantia stellifera* in association with, 346.
—, *Schizophyllum commune* on, in Brazil, 624.
—, *Sclerospora sacchari* on, legislation against, in Japan, 432; occurrence in the Philippines, 625; in Queensland, 274, 549; varietal reaction to, 274, 549.
—, sclerotic disease of, in Japan, 626.
—, *Sclerotium rolfsii* on, in Brazil, 624; in Colombia, 12; in the Philippines, 626.
— sereh disease in Brazil, 624.
— sett rot in Natal, 620.
— streak in Brazil, 619, 624; in Egypt, 625; in S. Africa, 438; varietal reaction to, 438, 619.
— stubble deterioration in U.S.A., 617.
—, *Ustilago scitaminea* on, in India, 477; in the Philippines, 625.
Sulphonated carboxylic acid as a spreader, 42.
Sulphur, catalytic, use of, against *Cercospora arachidicola* and *C. personata* on groundnut, 433.
—, colloidal, see Colloidal sulphur.
— deficiency and excess in coffee, 22.
— dust, effect of, on photosynthesis in apple, 685.
— dusts, use of, against *Cercospora arachidicola* and *C. personata* on groundnut, 236, 433; against *Cladosporium fulvum* on tomato, 637; against *Coccomyces hiemalis* on cherry, 785; against cotton diseases, 373; against *Diplocarpon rosae* on rose, 440, 598; against *Oidium* on *Piper betle*, 437; against *O. heveae* on *Hevea* rubber, 816; against *O. tingitaninum* on citrus, 795; against *Sclerotinia fructicola* on peach, 535; against *Sphaerotheca humuli* on strawberry, 325; against *S. pannosa* on rose, 598; against *Uromyces dianthi* on carnation, 505; against *Venturia inaequalis* on apple, 577.
[Sulphur], effect of soil applications of, on *Actinomyces scabies* on potato, 200; on *Bacterium solanacearum* on potato, 473, 788; on tobacco, 787; on *Bact. tumefaciens* on apple and pear, 161; on 'bitten-off' disease of tea, 729.
—, flotation, use of, against *Coccomyces hiemalis* on cherry, 236; against *Diplocarpon rosae* and *Sphaerotheca pannosa* on rose, 598.
—, flowers of, use of, against *Hevea* rubber chlorosis, 655; against *Uncinula necator* on vine, 153.
—, ground, use of, against *Oidium* on tomato, 555.
—, magnetic and mike, use of, against *Diplocarpon rosae* and *Sphaerotheca pannosa* on rose, 598.
— resin, use of, against *Marssonina panattoniana* on lettuce, 569.
— sprays, adhesiveness of, to foliage, 41.
—, vaporized, use of, against *Cladosporium fulvum* on tomato, 769.
—, wettable, use of, against *Cercospora arachidicola* and *C. personata* on groundnut, 433; against *Cladosporium fructicola* on peach, 785; against *Coccomyces hiemalis* on cherry, 785; against *Diplocarpon rosae* on rose, 440; against *Sclerotinia fructicola* on peach, 785; against *Venturia inaequalis* on apple, 236.
— dioxide injury, 467, 561.
— —, use of, against *Oospora fimicola* in mushroom beds, 88.
Sulphuric acid injury to beet seed, 77.
— —, use of, against *Bacterium malvacearum* on cotton, 391, 573; against seed-borne diseases of cotton, 105, 373; as a soil disinfectant, 182; as a wood pulp disinfectant, 774.
Sulsol, use of, against *Uromyces fabae* on bean, 568.
Sunflower (*Helianthus annuus*), *Bacterium tumefaciens* on, 159, 160; effect of apple aroma on, 790.
—, *Puccinia helianthi* on, in U.S.A., 128.
Swedes (*Brassica campestris*), brown heart of, control, 153, 364, 565; occurrence in England, 565; in Holland, 153; in New Zealand, 364; varietal reaction to, 565.
—, *Phoma lingam* on, in New Zealand, 222.
—, *Plasmodiophora brassicae* on, in Sweden, 776.
—, *Pseudomonas campestris* on, in New Zealand, 234.
—, *Sclerotinia sclerotiorum* on, 628.
—, virus disease of, in Germany, 811.
Sweet clover, see *Melilotus*.
Sweet pea (*Lathyrus odoratus*), *Bacterium fascians* on, in England, 597.
— —, — *tumefaciens* can infect, 159.
— —, broad bean mosaic can infect, 649.
— —, cucumber virus 1 on, in England, 784.

[Sweet pea], damping-off of, control, 181; in U.S.A., 440.
— —, lettuce mosaic affecting, in England, 650, 784.
— — mosaic in England, 784.
— —, pea virus 1 affecting, in England, 784.
— —, *Pisum* virus 3 can infect, 648.
— —, *Verticillium* can infect, 783.
Sweet potato (*Ipomoea batatas*), *Fusarium* (?) *bulbigenum* var. *batatas* and *F. oxysporum* f. 2 on, in Japan, 496.
— —, *Macrophomina phaseoli* on, in U.S.A., 286.
— —, *Pseudoperonospora cubensis* can infect, 86.
— —, *Pythium aphanidermatum* can infect, 781.
— —, —*ultimum* can infect, 497.
Sycamore, see *Acer pseudoplatanus*.
Synchytrium endobioticum on potato, breeding against, 268, 706; control, 199, 506; genetics of resistance to, 200; legislation against, in Denmark, 704; in Latvia, 224; occurrence in Czechoslovakia, 139; in Denmark, 88; in Germany, 200; in Holland, 268; in Norway, 412; in Poland, 199, 506, 704, 707; varietal reaction to, 268, 707.
Syringa vulgaris, see Lilac.

Tagetes erecta, epinastic response induced in, by *Bacterium solanacearum*, 789.
— —, *Macrophomina phaseoli* on, in Sierra Leone, 157.
Talc, use of, as a filler, 12, 17, 93.
Talcarsin, use of, for disinfecting clover seed, 115.
Tangerine, see Orange.
Tannic acid as a soil disinfectant, 182.
Taphrina on ferns, 820; in N. America, 141.
— on monocotyledons, 820.
— *acericola* on *Acer campestre* in Italy, 71.
— *aceris* on *Acer* in U.S.A., emended description of, 71.
— *amentorum* on alder in U.S.A., 414; *T. alni-incanae* synonym of, 415.
— *atkinsonii* on *Prunus* in N. America, 414.
— *aurea* on poplar in the Argentine, 478.
— *carveri* on *Acer saccharinum* in Canada and U.S.A., 718.
— *celtidis* on *Celtis australis* in France, 719.
— *communis* and *T. confusa* on *Prunus* in N. America, 414.
— *dearnessii* on *Acer rubrum* in Canada and U.S.A., 718.
— *deformans* on peach in U.S.A., 464, 786.
— *farlowii* and *T. flavorubra* on *Prunus* in N. America, 414.
— *lethifera* on *Acer* in U.S.A., emended description of, 71.
— *media* and *T. occidentalis* on alder in N. America, 414.
— *robinsoniana* on alder in N. America, 414; in U.S.A., 281.
— *rugosa* on alder in N. America, 414.
[*Taphrina*] *sacchari*, early record of, in U.S.A., 355.
— — on *Acer nigrum* and *A. saccharum* in U.S.A., 71.
Tar mixture, use of, against *Corticium salmonicolor* on rubber, 342.
Taraxacum officinale, *Sphaerotheca humuli* var. *fuliginea* on, in U.S.S.R., 615.
Taxodium distichum, *Fomes geotropus* on, in U.S.A., 772.
Taxus, see Yew.
Tea (*Camellia sinensis*), *Armillaria mellea* on, in Sumatra, 579.
—, *Asterina camelliae* on, in India, 822; in Sumatra, 579.
—, 'bitten-off' disease of, in Sumatra, 729.
—, *Botryodiplodia theobromae* on, in Java, 579.
—, *Cercosporella theae* on, in India, 821.
—, *Corticium invisum* on, in India, 822.
—, diseases of, in the Caucasus, 205.
—, *Fomes noxius* on, in Malaya, 504; in Sumatra, 579, 729.
—, *Ganoderma pseudoferreum* on, control, 504; occurrence in Java, 579, 630, 728; in Malaya, 504; in Sumatra, 579.
—, *Glomerella cingulata* on, in Sumatra, 579, 729.
—, *Helicobasidium compactum* on, in Sumatra, 579.
—, *Leptothyrium theae* on, in India, 822.
—, *Megalonectria pseudotrichia* on, in India, 822; *Stilbum cinnabarinum* conidial form of, 822.
—, *Nectria subquaternata* on, in India, 822.
—, *Pestalozzia theae* on, in Java, 728; in Sumatra, 579, 729.
— phloem necrosis in Ceylon, 712, 713.
—, *Poria* on, in Sumatra, 579.
—, — *hypolateritia* on, in Java, 629.
—, *Rosellinia* on, in Malaya, 504.
—, — *arcuata* on, in Sumatra, 579. 729.
—, — *bunodes* on, in Sumatra, 579.
—, *Ustulina zonata* on, in Malaya, 504; in Sumatra, 579.
—, witches' broom of, in Ceylon, 713.
Technique for collecting moulds from the upper air, 44; for counting soil Actinomycetes, bacteria, and fungi, 614; for culturing fungi pathogenic to man in chick embryos, 738; for detecting and differentiating plant viruses, 810; for detecting potato virus diseases, 610; for detecting *Ustilago tritici* in wheat seed-grain, 663; for determining small amounts of copper, 462; with *Aspergillus niger*, 241; for differentiating Polypores, 645; for estimating biotin by *Lophodermium* and *Nematospora*, 542; for forecasting ascospore discharge in *Venturia inaequalis*, 462; for growing fluorescent bacteria, 445; for inoculating barley with smuts, 792; plants by insect vectors, 756; rye in the field with *Claviceps purpurea*, 314; with smuts, 792; for the isolation of Chytridiales, 809; of *Phytophthora* from citrus bark, 450; for measuring interfacial friction of dusted seeds, 404; for ob-

taining bacteria-free cultures, 45, 110; for single spore isolation, 334, 404, 405; for staining tobacco mosaic virus, 211; for studying germination of oospores of *Plasmopara viticola*, 782; for statistical field studies on damping-off of beet, 776; for testing for suberin, 471; for testing fungicidal properties of volatile compounds, 753; resistance of *Ribes* to *Gloeosporium* and *Sphaerotheca* 402; for transmitting cassava mosaic, 231.
Teloconia rosae on rose in India, 59; synonymy of, 59, 711.
Tephrosia, Ravenelia tephrosiicola on, in Malaya, 505.
—, *Verticillium dahliae* on, in Uganda, 575.
— *candida* as an indicator of *Fomes lignosus*, 341.
— *vogelii, Fomes lignosus* on, in Dutch E. Indies, 136.
Terbolan, use of, against *Bacterium solanacearum* on tobacco, 554; against *Corticium solani* on citrus, 794.
Terpenic alcohol, use of, with silver nitrate in oat seed disinfection, 17.
Tetrachlorophenol as a timber preservative, 285, 563.
Tetracoccosporium quadratum, Stemphylium quadratum renamed, 141.
Tetramethylthiuram disulphide, use of, against *Venturia inaequalis* on apple, 461.
Textiles, rot-proofing of, 527.
Tezet, use of, with Bordeaux mixture, 3.
Thallium in relation to tobacco frenching, 716.
Thallosporales, amended classification of, 26.
Thamnidium chaetocladioides on meat in U.S.A., 255.
— *elegans* on food in U.S.S.R., 468.
— — on meat in U.S.A., 255.
Thea, see Tea.
Thelephora laciniata on pine and spruce in Czechoslovakia, 490.
Theobroma cacao, see Cacao.
Thermomyces on manure in U.S.A., 342.
Thiamin, effect of, on the growth of *Pythium butleri*, 268.
Thielaviopsis basicola on *Daphne mezereum* in England, 724.
— — on lupin in Germany, 116.
— — on *Scabiosa* in England, 724.
— — on tobacco, 350, 635; factors affecting, 634; in relation to necrosis, 555; nature of resistance to, 350; occurrence in Canada, 824; (?) in Hungary, 555; in U.S.S.R., 634, 635; varietal reaction to, 350, 824.
Thionol, toxicity of, to *Glomerella cingulata* and *Sclerotinia fructicola*, 806.
Thiourea, use of, in connexion with potato tuber disinfection, 136.
Thrips tabaci transmitting tomato tip blight, 351, 421.
Thuja occidentalis, Coryneum cardinale can infect, 149.
— *orientalis, Coryneum cardinale* on, 149; in U.S.A., 492.
[*Thuja*] *plicata, Coryneum cardinale* can infect, 149.
Thyronectria denigrata on *Gleditschia japonica* and *G. triacanthos* in U.S.A., 489.
Thyrospora synonym of *Stemphylium*, 141.
— *parasitica* synonym of *Stemphylium botryosum*, 141.
— *sarcinaeforme* renamed *Stemphylium sarcinaeforme*, 141.
Thysanolaena agrostis, Bacterium vasculorum on, in Mauritius, 374.
Tilachlidiopsis nigra identified as a *Cordyceps* parasitized by *Stilbella*, 737.
Tilachlidium butyri on butter in Denmark, 315.
Tilia, see Lime tree.
Tilletia ajrekari on *Pennisetum typhoides* in India, 628.
— *caries*, grass hosts of, 732.
— — in relation to asthma and hay fever of man, 679.
— — on wheat, see under Wheat. (See also *T. tritici* f. *intermedia*.)
— —, rye × wheat hybrids immune from, 661.
— *foetens*, grass hosts of, 732.
— — in relation to asthma and hay fever of man, 679.
— — on wheat, see under Wheat.
— —, rye × wheat hybrids immune from, 661.
— *horrida* on rice in Portuguese India, 711.
— *indica* in soil in India, 499.
— *tritici* f. *intermedia* on wheat in Turkey, 303.
Timber, *Alternaria humicola* on, in Finland, 774.
—, — *tenuis* on, in Italy, 362.
—, *Armillaria mellea* on, 360; in Finland, 564.
—, *Bispora nigra* on, in Switzerland, 149.
—, blue stain of, control in U.S.A., 363.
—, *Ceratostomella* on, in Germany, 220.
—, — *coerulea* on, effect of, on decay-resistance, 829; occurrence in Finland, 564.
—, — *piceae* on, factors affecting, 360; occurrence in Finland, 564.
—, — *ulmi* on, in Scotland, 640.
—, *Cladosporium herbarum* on, in U.S.A., 285.
—, *Coniophora* on, in Finland, 564.
—, — *puteana* on, 563; control, 220, 720, 830; effect of sap stain on resistance to, 829; factors affecting, 75, 360; occurrence in England, 75; in Great Britain, 362; in Southern Rhodesia, 785; in Sweden, 220; in U.S.A., 830; in U.S.S.R., 720; specific reaction to, 221; study on, 221; toxicity of creosote to, 286; X-ray study on, 563.
—, *Corticium* on, in Finland, 564.
—, *Daldinia concentrica*, on, in U.S.A., 356.
— decay, control, 361; effect of felling time on, in Switzerland, 357; on properties of wood, 361; specific

resistance to, 76; use of polarized light in the study of, 774.
[Timber], *Diplodia* on, in Malaya, 425.
—, *Discula pinicola* on, in U.S.A., 285.
—, *Fomes annosus* on, factors affecting, 360; occurrence in Finland, 564.
—, — *fomentarius* on, factors affecting, 360; zonate discoloration in, in U.S.A., 69.
—, — *fraxinophilus* on, in U.S.A., 69.
—, — *igniarius* on, varietal reaction to, 285; zonate discoloration in, in U.S.A., 69.
—, — *pini* on, X-ray study on, 563.
—, — *pinicola* on, biochemistry of, 4.
—, — *rimosus* on, varietal reaction to, 285.
—, — *roseus* on, in Great Britain, 361.
—, — *ulmarius* on, biochemistry of, 4.
—, fungi on, differential reaction of, to gallic and tannic acids, 360; enzymes of, 829; occurrence in Finland, 564.
—, *Ganoderma applanatum* on, biochemistry of, 4; zonate discoloration in, in U.S.A., 69.
—, *Geotrichoides* on, in Sweden, 198.
—, *Haplosporella vivanii* on, in Italy, 362.
—, *Hormiscium gelatinosum* on, in U.S.A., 285.
—, *Hormodendrum chamaeleon* and *H. elatum* on, in Italy, 362.
—, *Hypoxylon* on, in U.S.A., 356.
—, *Lentinus lepideus* on, control, 830; factors affecting, 4; note on, 775; occurrence in Great Britain, 361; in Sweden, 220; in U.S.A., 830; specific reaction to, 221; study on, 221.
—, — *squamosus* on, see *L. lepideus* on.
—, — *tigrinus* on, in Yugoslavia, 559.
—, *Lenzites* on, in Finland, 564; in Germany, 357.
—, — *abietina* on, factors affecting, 360; note on, 775; occurrence in Great Britain, 361.
—, — *sepiaria* on, control, 830; factors affecting, 360; occurrence in Great Britain, 361; in U.S.A., 285, 830; specific reaction to, 221.
—, — *trabea* on, control, 5, 285; factors affecting, 4; occurrence in Bermuda, 285; in Great Britain, 361; in U.S.A., 285; specific reaction to, 221.
—, *Leptographium serpens* on, in Poland, 488; *Scopularia serpens* synonym of, 488.
—, *Merulius lacrymans* on, 563; control, 220, 644, 720; effect of sap stain on resistance to, 829; factors affecting, 360; occurrence in Great Britain, 362; in Sweden, 220; in U.S.S.R., 720; production of oxalic acid by, 426; specific reaction to, 221; study on, 221; X-ray study on, 563.
—, *Mycotorula mucinosa* on, (?) identical with *Parendomyces albus*, 524.
—, — *zeylanoides* on, in Italy, 524.
—, *Nummularia atropunctata* on, in U.S.A., 356.
—, *Paxillus panuoides* on, in Germany, 426; in Great Britain, 362.
[Timber], *Penicillium* on, in S. Africa, 438.
—, *Peniophora gigantea* on, in Great Britain, 361.
—, *Phialophora fastigiata* on, effect of *Penicillium rugulosum* on, 198; factors affecting, 774; occurrence in Sweden, 198.
—, *Phialospora richardsiae* on, in Italy, 362.
—, *Pholiota squarrosa* on, factors affecting, 360.
—, Polyporaceae on, effect of growth substances on, 338; list of new, in U.S.A., 422.
—, *Polyporus* on, in Great Britain, 361.
—, — *anceps* on, factors affecting, 4.
—, — *benzoinus* on, in Great Britain, 361.
—, — *betulinus* on, biochemistry of, 4.
—, — *borealis* on, in Great Britain, 361.
—, — *hispidus* on, zonate discoloration in, in U.S.A., 69.
—, — *japonicus* and *P. orientalis* on, biochemistry of, 4.
—, — *robiniophilus* on, varietal reaction to, 285.
—, — *schweinitzii* on, biochemistry of, 4.
—, — *sulphureus* on, biochemistry of, 4, 426.
—, *Polystictus abietinus* on, in Great Britain, 361; in U.S.A., 562.
—, — *pergamenus* on, biochemistry of, 4.
—, — *sanguineus* on, biochemistry of, 4; specific reaction to, 221.
—, — *versicolor* on, specific reaction to, 221.
—, *Poria* on, in England, 75.
—, — *incrassata* on, in U.S.A., 285; varietal reaction to, 285.
—, — *vaillantii* on, effect of sap stain on resistance to, 829; factors affecting, 360, 493, 644; occurrence in Great Britain, 362; in U.S.A., 285; in U.S.S.R., 644; preferred as a name for *P. vaporaria*, 76; production of oxalic acid by, 426; specific reaction to, 221; toxicity of hydrogen sulphide to, 644; use of, for testing timber preservatives, 829; X-ray study on, 563.
—, — *vaporaria* on, see *P. vaillantii* on.
—, — *xantha* on, in Great Britain, 76, 362.
— preservation by copper sulphate, effect of oxalic acid on, 426; by the oxy-acetylene process, 656; by the Rueping process, 564; by steam, 361.
— —, factors affecting, 426.
— — in Germany, 150, 357; in S. Australia, 656; in U.S.A., 150, 285, 364.
— —, standard methods of, 76.
— —, use of arsenates for, 220; borax for, 425; carbolineums for, 563; 2-chloro-o-phenylphenol for, 285, 563; copper sulphate for, 426; creosote for, 220, 286, 361, 493, 563, 656, 829; dowicide G, H, and P for, 363; fluoran O.G. for, 830; lignasan for, 363, 425; mercuric chloride for, 426, 830; mineral coal tar as, 357; β-naphthol for, 563; γ-nitro-naphthalene for, 563; osmolites for, 775; pentachlorophenol for, 5, 285, 563;

permatol D for, 285; potassium dichromate for, 426, 830; santobrite for, 363; sodium arsenate for, 426; sodium bicarbonate and carbonate for, 364; sodium dichromate for, 830; sodium fluoride for, 426, 493, 563, 829; sodium pentachlorophenate for, 5; sodium silicofluoride for, 425; tetrachlorophenol for, 285, 563; zinc chloride for, 220, 426, 493, 563, 830; zinc chloride (chromated) for, 563; zinc-meta-arsenite for, 220.
[Timber] preservatives, German regulations for fluorine containing, 563; methods of testing, 364, 775, 829, 830.
—, *Pullularia pullulans* on, in Finland, 774; in U.S.A., 285.
—, *Rhinocladiella atrovirens* on, in Finland, 774.
—, *Rhodotorula glutinis* on, factors affecting, 774; in Sweden, 198.
—, *Saccharomyces cerevisiae* on, factors affecting, 774.
—, *Schizophyllum commune* on, cultural study on, 493.
—, *Sporobolomyces salmonicolor* var. *typicus* and *S. shibatanus* on, in Italy, 524.
—, *Stachybotrys alternans* on, in Italy, 362.
— staining in Italy, 362.
—, *Stereum frustulosum* on, differential reaction of, to gallic and tannic acids, 360; factors affecting, 361; spelling of the specific name of, 275.
—, — *purpureum* on, factors affecting, 360.
—, — *sanguinolentum* on, in Finland, 564; in Germany, 357.
—, — *subpileatum* on, differential reaction of, to gallic and tannic acids, 360.
—, *Strumella corynoidea* on, in U.S.A., 356.
—, *Torulopsis albida* on, in Italy, 524.
—, — *candida* on, in Sweden, 198.
—, — *minor* on, in Italy, 524.
—, *Trametes carnea* on, in Great Britain, 361.
—, — *pini* on, see *Fomes pini* on.
—, — *serialis* on, effect of growth substances on, 335; factors affecting, 4; occurrence in Great Britain, 76, 361; in U.S.A., 285.
—, *Xylaria fusca* and *X. polymorpha* on, in U.S.A., 356.
Tinea pistaciae in relation to *Phomopsis* on pistachio nut, 125.
Titaeosporina referred to *Gloeosporium*, 140.
Tobacco (*Nicotiana*), *Alternaria longipes* on, in India, 373; in Java, 555; in Southern Rhodesia, 483.
—, *Aspergillus flavus* on, in Southern Rhodesia, 632.
—, *Asterocystis radicis* on, in Italy, 483. (See also *Olpidium brassicae* on.)
— aucuba mosaic, intracellular inclusions in, 415; study on protein of, 62. (See also Tobacco virus 6.)
—, *Bacterium angulatum* on, control, 576, 764; factors affecting, 553; occurrence in Southern Rhodesia, 483; in U.S.A., 553, 576, 764; serological studies on, 553, 576.
[Tobacco, *Bacterium*] *fascians* can infect, 597.
—, — *solanacearum* on, control, 554, 787; factors affecting, 554; note on, 765; occurrence in Java, 481, 554, 555; in Sumatra, 279, 765; in U.S.A., 787; study on, 279; varietal reaction to, 554.
—, — *tabacum* on, control, 576, 635, 764, 765, 785; factors affecting, 442, 553, 764; note on, 553; occurrence in Southern Rhodesia, 483, 784; in U.S.A., 442, 553, 576, 764; in U.S.S.R., 635; physiological variant of *Pseudomonas fluorescens*, 764; serological studies on, 445, 553; transmission of, by *Epitrix parvula*, 442.
—, beet curly top virus affecting, acquired tolerance to, 823; occurrence in U.S.A., 142, 823; serological study on, 553.
—, brown root rot of, control, 64; factors affecting, 824; list of plants susceptible to, 716; occurrence in Canada, 64, 823; in U.S.A., 715; study on, 715; varietal reaction to, 824.
—, *Cercospora nicotianae* on, control, 483; factors affecting, 482; losses caused by, 483; note on, 765; occurrence in Java, 482, 555; in Southern Rhodesia, 483, 632; in Sumatra, 765.
—, chlorine toxicity to, in Southern Rhodesia, 632.
—, corcova of, in the Argentine, 202.
—, *Corticium solani* on, in Queensland, 502; in Southern Rhodesia, 483.
— crinkle, see Tobacco leaf curl.
— — dwarf in U.S.S.R., 631.
—, cucumber mosaic virus affecting, in U.S.S.R., 631.
—, — virus 1 affecting, in Germany, 803.
— diseases in Southern Rhodesia, supplement to handbook on, 483.
— enation virus, review of literature on, 60.
—, *Erwinia aroideae* on, in Java, 481, 555.
—, *Erysiphe cichoracearum* on, in Java, 555; in Southern Rhodesia, 632.
— etch in U.S.S.R., 631; protein of, 61.
— frenching in Java, 481; in Southern Rhodesia, 632; in U.S.A., 716; thallium in relation to, 716.
—, gloss disease of, in Germany, 196.
—, heavy proteins in normal leaves of, 60.
—, *Hyoscyamus* virus III on, study on, 202.
— leaf curl, mites in relation to, 479; occurrence in Burma, 156; in India, 90, 499; in Japan, 479; in Java, 481; in Sierra Leone, 157; in Southern Rhodesia, 632; in U.S.S.R., 631; transmission of, by (?) *Bemisia gossypiperda*, 499; by grafting, 90; varietal reaction to, 156; virus of, affecting (?) *Hibiscus esculentus*, (?) sesame, and *Stachytarpheta*, 157.
— lightning injury in Southern Rhodesia, 632.
—, *Macrophomina phaseoli* on, sclerotial form of, referred to *Sclerotium bataticola*, 634.

[Tobacco], *Matthiola incana* var. *annua* mosaic can infect, 459.
— moonburn in U.S.A., 577.
— mosaic, breeding against, 576, 631; control, 235, 554, 576, 631, 635, 765; cytological study on, 633; detection of, by turbidity determinations, 810; differentiation of, by the gold sol reaction, 543; disintegration of protein of, by urea, 630; double stream refraction of, 763; effect of, on metabolism of, 205; of sodium dodecyl sulphate on virus of, 210; of X-rays on, 209, 210; factors affecting, 630, 787; genetics of resistance to, 62, 576; hosts of, in Brazil, 633; immunity from, conferred by viruses, 207; inactivation of virus of, by *Aerobacter aerogenes* and *Aspergillus niger*, 348; by insect juices, 540; by micro-organisms, 348, 349; by phosphatase, 714; intracellular inclusions in, 62, 415, 468; movement of virus of, 823; occurrence in Brazil, 632; in India, 90; in Java, 481, 554; in New Zealand, 235; in Southern Rhodesia, 632; in Sumatra, 765; in Uganda, 576; in U.S.A., 576, 787; in U.S.S.R., 631, 635; particle size of, 714; petunia mosaic strain (?) identical with, 458; properties of virus, 143; relations of, to tomato aucuba mosaic, 556; serological study on, 631; staining of virus of, 211, 556; strains of, 90; studies on, 207, 556, 630, 632, 823; on protein of, 44, 45, 61, 62, 209, 210, 266, 275, 276, 277, 481; tolerance of *Lycopersicum hirsutum* to, 824; types of, 206–9; varietal reaction to, 415, 479, 481, 576, 630, 714, 715; virus of, affecting *Solanum* spp. in Brazil, 633; white forms of, in Java, 207; X-bodies in, 633. (See also Tobacco virus 1.)
— necrosis, host range of, 211; inhibition of, by juice of *Aceratagallia sanguinolenta*, 540; purification of virus of, 416; study on, 211; on protein of, 348; *Thielaviopsis basicola* in relation to, (?) in Hungary, 555.
—, *Olpidium brassicae* on, in Hungary, 139; (?) in Italy, 483.
—, *Peronospora tabacina* on, control, 63, 349, 417, 418, 419, 482; factors affecting, 349, 350; occurrence in Australia, 63; in Brazil, 482; in U.S.A., 63, 349, 350, 417, 418, 419, 482; present knowledge of, 418; study on, 350.
—, petunia mosaic can infect, 458.
—, Phycomycetes pathogenic to, list of, 482.
—, *Phytophthora parasitica* on, in Southern Rhodesia, 632.
—, — — var. *nicotianae* on, control, 787; factors affecting, 419, 481; notes on, 555, 765; occurrence in Java, 419, 481, 554; in Sumatra, 765; in U.S.A., 482, 787; study on, 419; varietal reaction to, 482.
—, (?) potassium deficiency in, in Mauritius, 374.
—, potato mosaic can infect, 51.
[Tobacco, potato] vira-cabeça can infect, 202.
—, — yellow dwarf can infect, 270.
— pox in Java, 554; transmission of (?) by *Bemisia* and *Myzus persicae*, 554; virus of, affecting chilli in Java, 554.
—, *Pseudomonas fluorescens* on, *Bacterium tabacum* a variant of, 764; occurrence in U.S.A., 553, 764.
— pseudo peh-sim in Sumatra, 765; transmission of (?) by Aleyrodidae, 765.
—, *Pythium* on, in Ceylon, 420.
—, — *aphanidermatum* on, in Southern Rhodesia, 785.
—, — *de Baryanum* on, in Italy, 483; in Southern Rhodesia, 483.
—, — *ultimum* on, in Southern Rhodesia, 483; in U.S.A., 497.
—, radish mosaic can infect, 427.
—, *Rhizopus arrhizus* on, in Southern Rhodesia, 632.
— ring rot, inactivation of virus of, by chemical compounds, 266; by juice of *Aceratagallia sanguinolenta*, 540; intracellular inclusions in, 416; occurrence in India, 90; in U.S.A., 763; in U.S.S.R., 631; study on, 763; on protein of, 61; virus of, affecting bean in Germany, 811.
— rosette, control, 278, 347; hosts of, 347; occurrence in Southern Rhodesia, 278, 347, 632; study on, 347; transmission of, by aphids, 278; by *Myzus persicae*, (?) 278, 347.
—, Rotterdam B disease of, 207.
—, *Sclerotinia minor* and *S. sclerotiorum* on, in U.S.S.R., 477.
— stolbur in U.S.S.R., 631.
— streak virus, inactivation of, by chemical compounds, 266.
—, *Thielaviopsis basicola* on, control, 350, 635; factors affecting, 634; nature of resistance to, 350; occurrence in Canada, 824; (?) in Hungary, 555; in U.S.S.R., 634, 635; relation of, to necrosis, 555; varietal reaction to, 350, 824.
—, tomato spotted wilt affecting, in France, 65.
—, — tip blight can infect, 420.
— virus 1 on tobacco, control, 235; effect of flue-curing on activity of, 480; inactivation of, by chemical compounds, 266; occurrence in New Zealand, 235; review of literature on, 60; study on protein of, 481. (See also Tobacco mosaic.)
— — — on tomato in Holland, 484.
— — 6, literature on protein of, 60.
— — —, see also Tomato aucuba mosaic.
— — diseases, classification of, in U.S.S.R., 631.
Tolyposporium ehrenbergii on sorghum in Italy, 517.
— *leptideum* on *Chenopodium album*, in Poland, 552; transferred to *Glomosporium*, 552.
— *volkensii* on sorghum in East Africa, 517.

Tomato (*Lycopersicum esculentum*) as test plant for potato virus B, 410.
—, *Alternaria solani* on, control, 66, 332, 421, 443, 728; factors affecting, 66; note on, 443; occurrence in French Morocco, 66; in Southern Rhodesia, 785; in U.S.A., 332, 376, 421, 443, 728; study on, 66; varietal reaction to, 376.
—, — *tomato* on, in Central America, Cuba, Mexico, U.S.A., and W. Indies, 766; nomenclature of, 766.
—, *Aplanobacter michiganense* on, control, 234, 421; note on, 765; occurrence in New S. Wales, 234; in New Zealand, 64, 235; in U.S.A., 421, 765; (?) in U.S.S.R., 422; in Victoria, 279; physiology of, 279; study on, 279.
— aucuba mosaic, intracellular inclusions of, 468; note on, 44; relation of, to tobacco mosaic, 556; study on, 556; on protein of, 61, 212.
—, *Bacterium atrofaciens* on, in U.S.S.R., 378.
—, — *solanacearum* on, epinastic response induced by, 789; occurrence in Ceylon, 422; in Victoria, 279; physiology of, 279; study on, 279; varietal reaction to, 422.
—, — *tumefaciens* can infect, 159.
—, — *vesicatorium* on, control, 421, 717; occurrence (?) in Japan, 717; in U.S.A., 421; in U.S.S.R., 379.
—, beet curly top affecting, in U.S.A., 64, 485, 824.
—, blossom end rot of, in Brazil, 637.
— bushy stunt in England, 353; properties of virus of, 143; protein studies on, 353.
—, *Cladosporium fulvum* on, breeding against, 353; control, 637, 769, 784; factors affecting, 142, 769; occurrence in Bulgaria, 413; in England, 784; in Italy, 280; in New S. Wales, 637; in U.S.A., 142, 353, 354, 769; physiology of, 352; synonymy of, 354; viability of, 142.
—, — *herbarum* on, in U.S.A., 354; synonymy of, 354.
—, *Colletotrichum gloeosporioides* on, in Trinidad, 194.
—, — *phomoides* on, in Canada, 725; in Hawaii, 658.
—, *Corticium solani* can infect, 759.
—, cucumber virus 1 affecting, in England, 783; in Germany, 509, 803.
—, damping-off of, in U.S.A., 440.
—, *Didymella lycopersici* on, control, 508; occurrence in Bulgaria, 413; in Germany, 508, 636; in Madeira, 711.
— enation mosaic, intracellular inclusions of, 468; note on, 44.
—, (?) *Erysiphe polygoni* on, in the Argentine, 555.
— fern-leaf in Austria and Germany, 811.
—, *Fusarium bulbigenum* var. *lycopersici* on, control, 439; genetics of resistance to, 766; occurrence in New S. Wales, 726; in U.S.A., 237, 422, 439, 766, 788; toxic action of, 49; varietal reaction to, 237, 422, 439, 557, 726, 766, 788.
[Tomato], *Guignardia* on, in Trinidad, 194.
—, heavy proteins in normal leaves of, 60.
— leaf curl in China, 608; in U.S.S.R., 698.
— — roll in China, 608.
— little leaf, cytology of, 43.
— mosaic, control, 421; movement of virus of, 823; nitrogen in relation to, 715; occurrence in China, 608; in Holland, 484; in U.S.A., 376, 421; in U.S.S.R., 62; X-bodies in, 62.
—, *Nematospora coryli* can infect, 796.
—, *Oidiopsis* on, in Burma, 156.
—, — *taurica* on, in French Morocco, 83.
—, petunia mosaic can infect, 458.
—, *Phoma destructiva* on, in New Zealand, 726; in Southern Rhodesia, 785; in Trinidad, 194.
—, *Phomopsis vexans* on, in Hungary, 140.
—, *Phytophthora* on, in U.S.A., 421.
—, — *cryptogea* on, in New Zealand, 726.
—, — *infestans* on, in Hungary, 140; in U.S.A., 728.
—, — *parasitica* on, antagonism of *Trichoderma koningi* to, 486; artificial infection by, 742; occurrence in Italy, 486.
—, potato vira-cabeça can infect, 202.
—, *Pseudoperonospora cubensis* can infect, 86.
—, *Pythium* on, in U.S.A., 421.
—, — *aphanidermatum* can infect, 781.
—, — *artotrogus* on, in Hungary, 140.
—, — *ultimum* can infect, 497.
—, *Rhizoctonia* on, in U.S.A., 421.
— ring spot in Hawaii, 657; transmission of, to *Emilia sonchifolia* and potato, 657.
—, *Sclerotium delphinii* can infect, 183.
—, — *rolfsii* on, in U.S.A., 79.
—, *Septoria lycopersici* on, in Brazil, 353; in U.S.A., 421.
— spotted wilt, breeding against, 825; host range of, 65, 235; note on, 784; occurrence in England, 783; in New Zealand, 235; in U.S.A., 439; studies on, 65, 556; virus of, affecting *Callistephus chinensis* in France, 65; celery in U.S.A., 369; (?) coffee in Brazil, 452; *Dahlia* in S. Africa, 112; lettuce in New Zealand, 235; *Physalis francheti* in France, 65; potato in New S. Wales, 373; tobacco in France, 65.
— streak, control, 484, 698; occurrence in China, 608; in Holland, 484; in U.S.S.R., 698; studies on, 484, 698; transmission of, by soil, 484; varietal reaction to, 698; virus of, affecting *Solanum nigrum* in Holland, 484.
— — (mixed-virus), control, 484; occurrence in England, 295, 783; in Holland, 484; in U.S.S.R., 698; serological study on, 698.
— tip blight, hosts of, 351, 420; occurrence in U.S.A., 350, 420; transmission of, by *Thrips tabaci*, 351, 421.
—, tobacco brown root rot can affect, 715.
—, — virus 1 on, in Holland, 484.
—, — — 6 on, study on protein of, 212.

[Tomato], *Verticillium* can infect, 783.
—, — *albo-atrum* on, breeding against, 825; occurrence in U.S.A., 570, 825.
— woodiness, host range of, 699; occurrence in U.S.S.R., 699.
Torula on cotton fabrics in New S. Wales, 726.
— on *Scorzonera tau-saghyz* in U.S.S.R., 137.
— *histolytica* synonym of *Debaryomyces neoformans*, 395.
— *kefiri*, inactivation of tobacco mosaic virus, by, 349.
— *maculicola* immature conidial stage of *Venturia tremulae*, 275.
Torulopsis albida on timber in Italy, 524.
— *candida* on wood pulp in Sweden, 198.
— *hominis*, its var. *honduriana*, and *T. meningitidis* synonyms of *Debaryomyces neoformans*, 395.
— *minor* on man and wood pulp in Italy, 524.
— *neoformans* synonym of *Debaryomyces neoformans*, 395.
— *pulcherrima* on apple, cherry, grape, and plum in Switzerland, 259.
Torulopsoideae, differentiation of, from Mycotoruloideae, 253.
Trachyderma a subdivision of *Ganoderma*, 712.
Trachyspermum copticum, *Botrytis* on, in U.S.S.R., 477.
Tragopogon porrifolius, see Salsify.
Trametes carnea on timber in Great Britain, 361.
— *cinnabarina*, effect of growth substances on, 335.
— *gibbosa* on broad-leaved trees in Japan, 719; renamed *Lenzites gibbosa*, 719; spore discharge in, 215.
— *incerta* on *Shorea robusta* in India, 642.
— *odorata*, spore discharge in, 215.
— *pini*, *Fomes pini* (q.v.) synonym of, 73.
— *serialis*, effect of growth substances on, 335.
— — on timber, factors affecting, 4; occurrence in Great Britain, 76, 361; in U.S.A., 285.
— *suaveolens* on *Salix* in Alaska, 642.
Tree diseases, Danish manual on, 212, 717.
Trichoconis caudata on rice in U.S.A., 546.
Trichoderma antagonistic to *Pythium* on maize and sugar-cane, 618; to soil-borne pathogens, 50.
— on oil palm in Malaya, 503.
— *glaucum* (?) identical with *T. viride*, 761.
— *koningi*, antagonism of, to *Phytophthora citrophthora*, 485; to *P. parasitica*, 485, 486.
— — in soil in Japan, 413.
— — synonym of *T. viride*, 761.
— *lignorum*, antagonism of, to *Macrophomina phaseoli*, 89; to *Ophiobolus graminis*, 664; to *Phytophthora citrophthora*, 485.
— —, introduction of, into soil in U.S.S.R., 817.
— — on *Abies grandis* in Holland, 358.
— — on citrus in U.S.S.R., 671.
— — on grapefruit in Trinidad, 193.
[*Trichoderma lignorum*] on larch in Holland, 358.
— — on paper in Italy, 696.
— — on pine in Holland, 358.
— —, *T. narcissi* and *T. nunbergii* synonyms of *T. viride*, 761.
— *viride* conidial stage of *Hypocrea rufa*, 761.
— — in mushroom compost in England, 295.
— — on *Narcissus* in England, 653.
— —, synonymy of, 761.
— *viridescens* synonym of *T. viride*, 761.
Tricholoma albobrunneum, effect of growth substances on, 542.
— — on pine and spruce, forming mycorrhiza, in Sweden, 542.
— *imbricatum*, effect of growth substances on, 542.
— — on pine and spruce, forming mycorrhiza, in Sweden, 542.
— *pessundatum* on pine and spruce, forming mycorrhiza, in Sweden, 542.
— *vaccinum* on pine, forming mycorrhiza, in Sweden, 542.
Trichonema, action of predacious fungi on, 520.
Trichophyton on man, ecto-endothrix type of, 523; Gram reaction of, 523; occurrence in the Argentine, 178; in China, 523; survey of, 177.
— *acuminatum* on man in Algeria, 177.
— *album* on man in Yugoslavia, 456.
— *cerebriforme* on man in Algeria, 177; in China, 523.
— *concentricum*, biochemical study on, 678.
— — on man in China, 523; in French Indo-China, 678; (?) in Japan, 524.
— *crateriforme*, biochemical characters of, 255.
— — on man in Algeria, 177.
— *fumatum* on man in Algeria, 177; in Madagascar, 522.
— *glabrum* on man in Algeria, 177; in China, 523; in Yugoslavia, 456; taxonomy of, 27.
— *gourvili* on man in Equatorial and French West Africa, 522.
— *gypseum*, new culture medium for, 178.
— — on man in the British Navy, 677; *T. interdigitale* referred to, 313.
— *immergens* on man in Yugoslavia, 456.
— *interdigitale* on man in the British Navy, 677; in Europe, 678; in Java, 27; referred to *T. gypseum*, 313; synonymy of, 313.
— *lacticolor*, biochemical study on, 678.
— *langeroni* on man in Yugoslavia, 456.
— *luxurians* on man in Algeria, 178.
— *mentagrophytes* on the guinea-pig, 177.
— — on man, biochemical study on, 522; effect of ultra-violet rays on, 737; occurrence in Algeria, 178; in Japan, 522; in U.S.A., 737; in Yugoslavia, 456.
— *ochraceum* on man in Java, 27.
— *pervesi* on man in Algeria, 177.
— *plicatile* on man in Algeria, 177; in Java, 27.

[*Trichophyton*] *polygonum* on man in Algeria, 177.
— *radiolatum* on man in Yugoslavia, 456.
— *regulare* on man in Algeria, 177.
— *rosaceum*, new culture medium for, 178.
— *rubrum*, elimination of bacteria in cultures of, 110; new culture medium for, 178.
— — on man in the British Navy, 677; in China, 110, 523; in Europe, 678; in French Indo-China, 522, 678; in Java, 27; study on, in Europe, 678.
— *singulare* on man in U.S.A., 312; renamed *Favotrichophyton album* var. *singulare*, 312.
— *soudanense* on man in Algeria, 177; in Equatorial and French West Africa, 522.
— *sulphureum* can infect the guinea-pig and monkey, 523.
— — on man in Algeria, 177; in Pondicherry, 522.
— *umbilicatum* on man in Algeria, 177.
— *vinosum* on the dog in Czechoslovakia, 455.
— *violaceum* on man, isolation of, 110; note on, 456; occurrence in Algeria, 177; in China, 110, 523; in Equatorial and French W. Africa, 522; in Pondicherry, 522; in U.S.S.R., 110; in Yugoslavia, 456; systematic position of, 27.
Trichosporium symbioticum on *Abies concolor* in U.S.A., 217; *Scolytus ventralis* in relation to, 217.
Trichosporon on man, Gram reaction of, 523.
— *giganteum* and *T. humahuaquensis* on man in the Argentine, Brazil, Colombia, and Venezuela, 526.
Trichothecium roseum, antagonism of *Actinomyces albus* and *Bacillus subtilis* to, 129.
— — on apple in Denmark, 119; in England, 744.
— — on chestnut in Italy, 355.
— — on citrus in U.S.S.R., 671.
— — on cotton in the Argentine, 478.
Trifolium, see Clover.
Trigonella foenum-graecum, *Uromyces trigonellae* on, in France, 549.
Triogen, injury caused by, 598.
Trioxymethylene, use of, against *Ustilago avenae* on oats, 17.
Tripsacum dactyloides, *Aplanobacter stewarti* on, in U.S.A., 449.
— *laxum*, *Puccinia polyspora* on, in Venezuela, 141.
Tripteris, *Colletotrichum* on, in S. Africa, 438.
Trisodium phosphate as a disinfectant against tobacco mosaic, 554, 765.
Triticum, see Wheat.
Trolliomyces rosae, synonym of *Teloconia rosae* (q.v.), 711.
Tropaeolum majus mosaic in China, 608.
— —, *Oidiopsis taurica* on, in French Morocco, 83.
— —, tomato tip blight can infect, 420.
Tryblidiella fusca and *T. rufula*, taxonomy of, 552.
Tsuga canadensis, *Fomes pinicola* on, viability of, 2.
— — and *T. caroliniana*, *Melampsora farlowii* on, in Canada and U.S.A., 719.
Tuberculina persicina parasitizing *Phragmidium mucronatum* in England, 528.
Tuburcinia, *Urocystis* recommended for conservation against, 755.
— *avenae-elatioris* on *Arrhenatherum avenaceum* in Poland, 552.
Tulip (*Tulipa*), *Botrytis tulipae* on, control, 30; occurrence in Bulgaria, 712; in Estonia, 655; in New Zealand, 726; in U.S.A., 30.
— breaking, nuclear pigmentation in relation to, 257; occurrence in Italy, 528; in New Zealand, 726; relation of, to lily mosaic, 318; to tulip virus 1, 257; X-bodies in, 529.
—, cucumber mosaic can infect, 318.
—, — virus 1 type virus affecting, in England, 182.
—, *Fusarium avenaceum* on, in England, 30.
—, *Phytophthora cactorum* on, in Canada, 726.
—, — *cryptogea* and *P. erythroseptica* on, in England and Scotland, 183.
— virus 1 in relation to tulip breaking, 257.
Turf, *Calonectria graminicola* on, in Sweden, 298.
—, see also Grasses.
Turnip (*Brassica campestris*), *Matthiola incana* var. *annua* mosaic can infect, 459.
— mosaic, host range of, 223; inhibition of, by juice of *Aceratagallia sanguinolenta*, 540; occurrence in U.S.A., 223; transmission of, by *Brevicoryne brassicae* and *Myzus persicae*, 223; virus of, affecting *Cardamine heterophylla* and wallflower in New Zealand, 234.
—, *Plasmodiophora brassicae* on, breeding against, 776; control, 509; occurrence in Germany, 509; in Sweden, 720, 776; varietal reaction to, 509, 720, 776.
—, *Pseudomonas campestris* on, in New Zealand, 234.
—, *Pythium ultimum* can infect, 497.
—, radish mosaic can infect, 427.
—, virus disease of, in Germany, 811.
Turtle, Saprolegniaceae on the, in U.S.A., 799.
Tympanis on pine in N. America, 827.
— (?) *pinastri* on pine in U.S.A., 217.
Typhula on colza in Germany, 494.
— on rye in Sweden, 298.
— *itoana* accepted as the correct name for *T. graminum*, 298.
— —, confusion between *Sclerotium rhizodes* and, 34.
— — on *Phleum pratense*, rye, and wheat in Sweden, 298.
— *trifolii* on clover in Sweden, 299.

Ulmus, see Elm.
Ultracentrifugation in virus studies, 61, 62, 126, 348, 703.

Ultra-short radio waves, effect of, on *Actinomyces scabies*, *Alternaria solani*, *Bacterium vesicatorium*, *Cephalosporium*, *Diplodia zeae*, *Gibberella saubinetii*, and *Saccharomyces*, 46.
— -violet rays, effect of, on *Alternaria solani*, 45, 46; on *Gibberella fujikuroi*, 46; on *G. saubinetii*, 46; on *Sclerotium rolfsii*, 45; on *Trichophyton mentagrophytes* on man, 737; use of, for detection of *Ustilago tritici* on wheat, 663.
Uncinula, host range of, 58.
— *necator* on vine in France, 153; in Germany, 781.
Urea, production of, by fungi, 198.
Uredinales, see Rusts.
Uredinopsis ceratophora, *U. longimucronata*, *U. mirabilis*, *U. osmundae*, *U. phegopteridis*, and *U. struthiopteridis* on *Abies* and ferns, life-histories of, 551; occurrence in U.S.A., 551.
Uredo deutziicola on *Deutzia pulchra* var. *formosana* in Eastern Asia, 204.
— *quercus* on pine in Europe, 73; distinct from *Peridermium cerebrum*, 73.
Urocystis recommended for conservation against *Tuburcinia*, 755.
— *cepulae* on onion in New Zealand, 82; in U.S.A., 367.
— *gladioli* on gladiolus in Switzerland, 139; in U.S.A., 33.
— *occulta* on rye in Poland, 166.
— *tritici* on wheat, control, 170; effect of, on root development, 14; genetics of resistance to, 169; nutrition of host in relation to, 791; occurrence in Australia, 656; in Egypt, (?) 170; in New S. Wales, 169, 373, 656; in U.S.A., 169; in Victoria, 791; physiologic races of, 169; varietal reaction to, 14, 169, 656.
Uromyces in Japan, 141.
— *anthyllidis* f. *medicaginis* on *Medicago maculata* in France, 549.
— *appendiculatus* on bean, control, 442; effect of, on host, 128; factors affecting, 48, 471; occurrence in Hawaii, 366; in U.S.A., 128, 442; physiologic races of, 366.
— — on *Phaseolus lunatus* in Bermuda, 505.
— *betae* on beet in Belgium, 79; in U.S.A., 128.
— *briardi* on vetch in France, 549.
— *caryophyllinus* on carnation, host-parasite relationship of, 812.
— *ciceris-arietini* on *Cicer arietinum* in France, 549.
— *decoratus* on *Crotalaria juncea* in Japan, 141.
— *dianthi* on carnation in Bermuda, 505.
— *fabae* on broad bean in China, 553; in Egypt, 567; in Venezuela, 141.
— — on lentils in Palestine, 204.
— — on pea, host-parasite relationship of, 812.
— — on vetch in China, 553; in France, 549.
— *holwayi* on lily in Japan, 141.
— *indigoferae* on *Indigofera tinctoria* and *I. suffruticosa* in U.S.A., 820.
[*Uromyces*] *lupinicolus* on lupin in Germany, 116.
— *musae* on banana in Fiji, 92.
— *renovatus* on lupin in France, 549; in Germany, 116; in Portugal and Spain, 600.
— *striatus* on lucerne, factors affecting, 397; occurrence in U.S.A., 375; in U.S.S.R., 397; in Venezuela, 141; varietal reaction to, 397.
— *trigonellae* on *Trigonella foenum-graecum* in France, 549.
— *vignae* on cowpea in Cyprus, 91.
Urtica dioica, *Helicobasidium purpureum* on, in Italy, 479.
Uspulun, use of, against *Alternaria* on *Godetia hybrida*, 596; against *A. cheiranthi* and *Ascochyta cheiranthi* on wallflower, 596; against *Bacterium tumefaciens* in soil, 382; on apple and pear, 161; against citrus albinism, 247; against *Tilletia caries* on wheat, 166; against *Urocystis occulta* on rye, 166.
— -universal, use of, against *Bacterium tumefaciens* on apple and pear, 161.
Ustilaginales, life-cycles of, 628.
— of Utah, 820.
Ustilaginoidea virens on rice in Burma, 155.
Ustilago, species of, in the Argentine, 710.
— *avenae* in relation to asthma and hay fever of man, 679, 737.
— — on oats, breeding against, 99, 242, 588, 668; control, 17, 243, 605; factors affecting, 243, 610; methods for inoculation of, 172; occurrence in Finland, 668; in France, 17, 304; in Germany, 303, 669; in U.S.A., 11, 15, 16, 99, 242, 243, 441, 587; in U.S.S.R., 605; physiologic races of, 15, 304, 441; serological diagnosis of, 162; study on, 16; varietal reaction to, 16, 99, 242, 303, 304, 587, 668, 669; vernalization in relation to, 243.
— *bulgarica* on sorghum in Italy, 517.
— *bullata* on grasses in U.S.A., 441.
— *crameri* on *Setaria italica* in China, chlamydospore formation in, 174.
— *eleusinis* on *Eleusine coracana* in India, 628.
— *fischeri* on maize in relation to maize smut poisoning, 111.
— *hordei*, hosts of, in U.S.A., 665.
— — in relation to asthma and hay fever of man, 679.
— — on *Agropyron cristatum* in U.S.A., 665.
— — on barley, control, 170, 605; hybridization of, with *U. nigra*, 296; methods of inoculating, 296, 388; occurrence in Egypt, 170; in India, 585; in U.S.A., 388, 665; in U.S.S.R., 605; varietal reaction to, 388; viability of, 585.
— — on *Elymus glaucus jepsoni* in U.S.A., 665.
— —, serological diagnosis of, 162.
— *hydropiperis*, *Sphacelotheca hydropiperis* referred to, 710.

[*Ustilago*] *kolleri* in relation to asthma and hay fever of man, 679, 737.
— — on oats, breeding against, 99, 242, 588; factors affecting, 243; methods of inoculation of, 172; occurrence in India, 585; in U.S.A., 11, 16, 99, 242, 243, 441, 587, 665; physiologic races of, 16, 441; study on, 16; varietal reaction to, 99, 242, 587; vernalization in relation to, 243; viability of, 585.
— *medians* on barley in U.S.A., 388.
— *nigra*, grass hosts of, in U.S.A., 666.
— — on barley, 296.
— *nuda* on barley in Germany, 98, 242.
— — on wheat, inoculation experiments with, 792.
— *perennans* on *Arrhenatherum avenaceum* in the Argentine, 34.
— *scitaminea* on sugar-cane in India, 477; in the Philippines, 625.
— *sorghicola* on sorghum in Italy, 517.
— *striaeformis* on grasses in U.S.A., 441.
— *tritici* in relation to asthma and hay fever of man, 679.
— — on wheat, see under Wheat.
— —, wheat × rye hybrids immune from, 661.
— *vaillantii* on *Muscari botryoides* in England, 724.
— — on *Scilla verna* in England, 724.
— *violacea*, effect of aneurin on, 185, 232; of auxins on, 485.
— — on carnation in England, 783.
— *zeae* in relation to asthma and hay fever of man, 679.
— — on maize, antagonism of Métalnikov's bacillus to, 380; control, 155; cultural study on, 670; effect of growth substances on, 18; non-toxicity of, to guinea-pigs, 396; note on, 243; occurrence in Italy, 580; in New S. Wales, 155; in U.S.A., 243, 670; serological diagnosis of, 162; spine development on spores of, 173; toxicity of, to animals, 18; to man, 111.
Ustulina vulgaris can infect ash, elm, horse-chestnut, and lime tree, 70; oak, 356; poplar, 70.
— — on beech in Great Britain, 69, 638.
— — on forest trees in U.S.A., 356.
— — on lime tree in Denmark, 1.
— —, spore germination of, 69.
(?) — *zonata* on avocado pear in Malaya, 504.
— — on *Erythrina lithosperma* stumps in Ceylon, 713.
— — on *Hevea* rubber in Sumatra, 579.
— — on tea in Malaya, 504; in Sumatra, 579.

Vaccinium, *Microsphaera alni* var. *vaccinii* on, in U.S.A., 694.
—, *Ovulinia azaleae* on, in U.S.A., 742.
—, *Pucciniastrum myrtilli* on, in U.S.A., 643.
— *canadense*, *Calyptospora goeppertiana* on, in U.S.A., 491.
[*Vaccinium*] *corymbosum*, *Diaporthe vaccinii* can infect, 403.
— *macrocarpon* and *V. oxycoccus*, see Cranberry.
— *pennsylvanicum*, *Calyptospora goeppertiana* on, in U.S.A., 491.
— *vitis-idaea* var. *minus*, *Calyptospora goeppertiana* on, in U.S.A., 492.
Valeriana officinalis, *Sclerotinia sclerotiorum* on, in U.S.S.R., 477.
Valsa ceratosperma, effect of growth substances on, 336.
— *cincta* on plum in Germany, 508.
— *decorticans* on *Ostrya carpinifolia* in Italy, 72; *Cytospora decorticans* pycnidial form of, 72.
— *friesii* on *Abies*, 74.
— *leucostoma* on plum in Germany, 508.
— *pini*, effect of growth substances on, 336.
— *salicina* on *Salix* in Alaska, 642.
Variation in *Candida albicans*, 394, 526; in fungi, 526; in *Gibberella saubinetii*, 511; in *Glomerella gossypii*, 175. (See also Saltation.)
Vegetable marrow (*Cucurbita pepo*), *Colletotrichum lagenarium* on, in the Azores, 711.
— —, cucumber virus 1 on, in England, 647, 783.
— —, low temperature injury to, in U.S.A., 723.
— — mosaic in China, 608; in New Zealand, 726.
— —, *Pisum* virus 3 can infect, 648.
— —, (?) *Pythium* on, in Italy, 203.
— —, — *ultimum* on, in U.S.A., 497.
— —, see also Squash.
Vegetables, diseases of, in U.S.A. markets, 35; handbook of, 564; Hawaiian bulletin on, 222.
Venturia inaequalis on apple, see under Apple.
— *pirina* on pear, see under Pear.
— *populina* on poplar in Italy, 639; *Pollaccia elegans*, imperfect stage of, 639.
— *tremulae*, differentiation of, from *V. populina*, 639.
— —, *Torula maculicola*, immature stage of, 275.
Veratrum album, mycorrhiza of, 470.
Verbascum vernale, *Bacterium fascians* on, in Germany, 33.
Verderame, use of, against *Bacillus vitivorus* on vine, 499; against *Pleospora herbarum* on lettuce, 496.
Vermicularia on elm in U.S.A., 281.
— *bakeri* renamed *Colletotrichum bakeri*, 57.
Vernalization of oats, effect of, on the incidence of smuts, 243.
Vernonia baldwini, *V. fasciculata*, *V. missurica*, and *V. noveboracensis*, *Coleosporium vernoniae* on, in U.S.A., 424.
Verticillium, host range of, 783.
— on *Acer* in U.S.A., 281, 354.
— on barberry in U.S.A., 281.
— on chrysanthemum in England, 783.
— on cotton in Peru, 25.

[*Verticillium*] on elm in U.S.A., 281.
— on potato in Norway, 412.
— on strawberry in England, 809; in U.S.A., 402.
— *albo-atrum* can infect chrysanthemum, 783; tomato, 570.
— — on *Acer*, almond, and *Catalpa speciosa* in U.S.A., 67.
— — on chilli in U.S.A., 570.
(?) — — on cotton in the Belgian Congo, 248; in Greece, 26.
— — on elm in Denmark, 88; in U.S.A., 67.
— — on hops in England, 709.
— — on *Robinia pseud-acacia* in U.S.A., 67.
— — on tomato in U.S.A., 825.
— —, urea-forming enzyme of, 198.
— *armoraciae* on horse-radish in Germany, 365.
— *dahliae* can infect chilli, 575; chrysanthemum, 783; *Crotalaria striata*, 575.
— — on *Abroma* and cassava in Uganda, 575.
— — on chrysanthemum in Holland, 154.
— — on cotton in Uganda, 574, 575; in U.S.S.R., 127; physiology of, 250; serological study on, 127; varietal reaction to, 127, 574.
— — on hops in England, 709.
— — on *Sesamum orientale* and *Tephrosia* in Uganda, 575.
Vetch (*Vicia* spp.), broad bean mosaic can infect, 649.
—, *Calonectria graminicola* var. *neglecta* on, in Germany, 831.
—, *Corticium solani* on, in Germany, 832.
—, *Fusarium avenaceum* on, in Germany, 831.
—, — *orthoceras* on, in Germany, 832.
—, — *oxysporum* on, in Germany, 831.
—, mycorrhiza of, in Italy, 470.
—, *Pisum* virus 3 can infect, 648.
—, *Sclerotinia trifoliorum* on, 628.
—, tobacco brown root rot can affect, 716.
—, *Uromyces briardi* on, in France, 549.
—, — *fabae* on, in China, 553; in France, 549.
Vibrio desulfuricans in relation to copper deficiency of soil, 240.
Vicia spp., see Vetch.
— *faba*, see Beans.
Vigna unguiculata, see Cowpea.
Vincetoxicum officinale, *Cronartium asclepiadeum* on, 644.
Vine (*Vitis*), *Alternaria* on, in Italy, 498.
—, *Bacillus vitivorus* on, legislation against, in Nyasaland, 768; occurrence in France, 498.
—, bacterial diseases of, in France, 87.
—, boron deficiency in, 372.
—, *Botrytis cinerea* on, control, 232, 805; factors affecting, 805; occurrence in the Argentine, 295; in S. Africa, 232, 804, 805; use of, to impart aroma to fruit of, 510.
—, California disease of, in U.S.A., 370.
—, *Cercospora roesleri* on, in Cyprus, 91.
— chlorosis, control, 435, 499; factors affecting, 499; note on, 499; occurrence in Austria, 87; in France, 435, 499; in Yugoslavia, 499; types of, 87.
[Vine], copper injury to, 536.
—, 'coulure' of, in France, 724.
—, court-noué of, a form of vine degeneration, 86; control, 436, 652; distinct from boron deficiency, 372; etiology of, 652; factors affecting, 571; notes on, 10, 294; occurrence in Algeria, 294; in France, 571, 652; in Germany, 294, 652; in Greece, 10; in Tunis, 294; *Phylloxera vastatrix* in relation to, 294, 571, 652; 'reisigkrankheit' and 'rollerkrankheit' in relation to, 652.
— degeneration, forms of, 86, 294.
— diseases, French handbook of, 152.
—, 'drop' of fruit of, in S. Africa, 805.
—, dying out of, in Germany, 372.
—, *Elsinoe ampelina* on fruit of, in Queensland, 502.
—, *Fusicoccum viticolum* on, in S. Africa, 231.
—, *Guignardia bidwellii* on, in the Argentine, 478; *Phoma uvicola* imperfect stage of, 478.
—, 'kräutern' of, in Germany, 294.
— leaf roll in Germany, 810.
—, lightning injury to, in S. Australia, 152.
—, little leaf of, in S. Africa, 187.
—, loose neck of, in S. Africa, 804.
—, low temperature injury to, in France, 87.
— melanose in Germany, 508.
— mosaic in Czechoslovakia, 464.
—, *Penicillium* on, in S. Africa, 804, 805.
—, *Plasmopara viticola* on, breeding against, 371, 435, 653; control, 10, 87, 153, 508, 653, 781; germination of oospores of, 782; occurrence in Denmark, 85; in France, 10, 153; in Germany, 371, 435, 508, 510; in Italy, 653, 781; in Rumania, 232, 782; in Switzerland, 87; overwintering of, 653; spray residues in soil in relation to, 435; varietal reaction to, 508, 510, 653.
—, *Pumilus medullae* on, in Germany, 294.
—, *Pythium aphanidermatum* can infect fruits of, 781.
—, — *de Baryanum* on, in Greece, 11.
— 'reisigkrankheit', a form of vine degeneration, 86; heritability of, 510; identified with court-noué, 652; notes on, 294, 371, 810; occurrence in Germany, 294, 371, 510, 652, 810.
— 'rollerkrankheit', (?) identical with court-noué, 652; occurrence in Germany, 294, 652.
—, *Sclerotinia sclerotiorum* on, in Greece, 10.
—, *Torulopsis pulcherrima* on, in Switzerland, 259.
—, 'überaltern' (precocious senility) of, in Germany, 294.
—, *Uncinula necator* on, in France, 153; in Germany, 781.
Viola, *Corticium solani* on, in England, 802.

[*Viola*], *Myrothecium roridum* on, 157; in England, 802.
—, *Pythium* on, in England, 802.
—, *Sclerotium delphinii* can infect, 183.
— *tricolor*, see Pansy.
Violet (*Viola*), *Sclerotium delphinii* on, in England, 654.
—, *Sphaceloma violae* on, in New S. Wales, 373.
Virginia creeper (*Parthenocissus*), *Bacillus vitivorus* on, legislation against, in Nyasaland, 768.
Virginian stock (*Malcomia maritima*), *Matthiola incana* var. *annua* mosaic on, 459.
Viricuivre, use of, against *Plasmopara viticola* on vine, 87.
Virus diseases, anatomical aspects of, 198.
— —, books on, 605, 756.
— —, host index of, 197.
— —, list of, in Bermuda, 550.
— —, supplement to bibliography of, 197.
— —, synopsis of, 540.
— —, see also mosaic, &c., under hosts.
Viruses, history of research in, 697.
—, intracellular inclusions caused by, 297, 529, 633.
—, method of detecting and differentiating, 810.
—, nature of, 266, 606.
—, nomenclature of, 606, 607.
—, plant proteins in relation to, in China, 541.
—, properties of, 233, 540.
—, reviews of recent work on, 125, 233, 405, 468, 540, 606, 697, 756, 812.
—, separation of, by chemical means, 266.
Vitamin B, see Aneurin.
Vitis, see Vine.
— *caesia*, *Plasmopara viticola* on, in Sierra Leone, 157.
— *heterophylla*, *Pseudoperonospora cubensis* can infect, 86.
Volck, use of, as an adhesive, 443.
Volvaria diplasia, *Corticium* on, in Burma, 156.
— —, cultivation of, in Burma, 156.
Vomasol S, use of, against *Sphaerotheca pannosa* on rose, 528.

Wallflower (*Cheiranthus cheiri*), *Alternaria cheiranthi* on, in Denmark, 596.
—, *Ascochyta cheiranthi* on, in Denmark, 572, 596.
—, cucumber virus 1 affecting, in Germany, 509, 803.
—, *Matthiola incana* var. *annua* mosaic can infect, 459.
—, *Sclerotium delphinii* can infect, 183.
—, turnip mosaic affecting, in New Zealand, 234.
Walnut (*Juglans*), *Bacterium juglandis* on, in New S. Wales, 91; in U.S.A., 423.
— diseases in Great Britain, 398.
—, factory gases causing injury to, in Italy, 561.
—, *Gnomonia leptostyla* on, in U.S.A., 354.
—, toxicity of roots of, to *Rhododendron catawbiense*, 423.
Washingtonia filifera, *Penicillium vermoeseni* on, in U.S.A., 451; synonymy of, 451.
Watermelon (*Citrullus vulgaris*), *Fusarium bulbigenum* var. *niveum* on, in U.S.A., 85, 368.
—, low temperature injury to, in U.S.A., 723.
—, *Pythium acanthicum* on, in U.S.A., 650.
—, — *anandrum* can infect, 651.
—, — *aphanidermatum* on, in U.S.A., 781.
—, — *helicoides* on, in U.S.A., 650.
—, — (?) *irregulare* on, in U.S.A., 84.
—, — *periplocum* on, in U.S.A., 650.
—, — *ultimum* on, in U.S.A., 497.
Waxed wrappers in relation to mould wastage of grapes, 805.
Whale-oil soap, use of, as an adhesive, 192.
Wheat (*Triticum*), bacteriorrhiza of, in U.S.S.R., 128.
—, *Bacterium translucens* var. *undulosum* on, in Sweden, 665.
—, *Cephalosporium gramineum* on, in Japan, 387; *C. acremonium* distinct from, 387.
—, *Cercosporella herpotrichoides* on, control, 98, 385, 586; factors affecting, 15, 448, 586; occurrence in Denmark, 385; in England, 448; in France, 372; in Germany, 15, 98, 586.
—, *Coprinus urticaecola* on, in Canada, 665; *C. brassicae* and *C. phaeosporus* synonyms of, 665.
—, *Corticium solani* on, in Victoria, 97.
—, *Curvularia ramosa* on, in Victoria, 97.
—, *Dilophospora alopecuri* on, in Germany, 586.
—, *Erysiphe graminis* on, breeding against, 385; effect of, on metabolism of host, 14, 171; factors affecting, 228, 471; genetics of resistance to, 471; occurrence in Germany, 385; in Italy, 166, 228, 471; in U.S.A., 15; physiologic specialization of, 385; studies on, 15, 171, 228, 385; *Tilletia caries* antagonistic to, 166; varietal reaction to, 385.
—, *Fusarium* on, control, 93, 446; factors affecting, 97; occurrence in Canada, 515; in England, 446; in U.S.A., 93; root development in relation to, 515; seed tests for, 93.
—, — *culmorum* on, control, 94, 97; factors affecting, 97; occurrence in Canada, 733; in New Zealand, 94; in Victoria, 97; soil micro-organisms in relation to, 733.
—, — *oxysporum* var. *aurantiacum* on, in the Argentine, 315.
—, *Gibberella saubinetii* on, control, 93; occurrence in Canada, 725; in U.S.A., 93, 661; in U.S.S.R., 659; seed tests for, 93; use of bacteria against, 659.
—, grey speck of, in Denmark, 88.
—, *Helminthosporium gramineum* on, in Italy, 580.
—, — *sativum* on, control, 93, 97; effect of, on seed, 513; factors affecting, 97; occurrence in Canada, 515, 733; in U.S.A., 93; in Victoria, 97; root development in relation to, 515; seed

tests for, 93; soil micro-organisms in relation to, 733.
[Wheat] mosaic, factors affecting, 98; occurrence in Japan, 98; in U.S.A., 661; in U.S.S.R., 297; transmission of, by soil, 98.
—, *Mycosphaerella hordei* on, in Germany, 140.
—, *Naucoria cerealis* on, in U.S.A., 164.
—, *Ophiobolus graminis* on, antagonism of soil micro-organisms to, 664, 733; ascospore infection by, 386; control, 98, 385, 586; factors affecting, 241; notes on, 656, 809; occurrence in Australia, 656; in Canada, 515, 733; in Denmark, 385; in England, 664; in France, 372; in Germany, 98; in Holland, 241; in U.S.A., 585; pathogenicity of, 792; root development in relation to, 515; study on, 585; viability of, 172.
—, *Periconia circinata* on, in England, 809.
—, *Polymyxa graminis* on, in Canada, 449.
—, *Puccinia* on, in India, 511; overwintering of, 167.
—, — *glumarum* on, breeding against, 447; factors affecting, 95, 168, 447, 513; genetics of resistance to, 584; influence of *Tilletia caries* on resistance to, 300; nitrogen content in relation to, 300; occurrence in the Alps, 734; in the Argentine, 584; in Bulgaria, 734; in Cyprus, 90; in Germany, 168, 512, 734; in India, 90; in Italian E. Africa, 95; in Italy, 580; in Japan, 734; in U.S.A., 583; in U.S.S.R., 447; overwintering of, 168; physiologic races of, 512, 734; toxic substances in host plant inhibiting growth in, 791; varietal reaction to, 90, 95, 447, 512, 584.
—, — *graminis* on, barberry eradication against, 165; breeding against, 239, 242, 447, 660, 731; brown necrosis caused by, 662; chemical composition of straw in relation to resistance to, 382; control, 439; effect of, on seed, 513; on yield, 88, 374, 660; factors affecting, 94, 95, 165, 239, 447, 793; genetics of resistance to, 169; losses caused by, 94; occurrence in Abyssinia, 507; in Australia, 239; in Canada, 165, 513, 724; in Cyprus, 90; in Denmark, 88; in Germany, 383, 730; in India, 90; in Italian E. Africa, 95; in Italy, 580; in Kenya, 439; in New S. Wales, 169, 656; in New Zealand, 239; in Poland, 661; in U.S.A., 94, 165, 169, 239, 242, 254, 374, 660, 730; in U.S.S.R., 447; overwintering of, 94, 239; physiologic races of, 94, 169, 239, 383, 507, 661, 730; *Pythium* root rot inducing susceptibility to, 165; varietal reaction to, 90, 94, 95, 165, 169, 242, 439, 447, 656, 660, 661, 724, 730.
—, — *triticina* on, breeding against, 384, 447, 660; control, 375; effect of light on, 471, 793; on yield, 660, 663, 724; factors affecting, 95, 447, 471, 509, 584, 663, 731; genetics of resistance to, 384, 790; infection period of, 383; nitrogen content in relation to, 300; occurrence in Australia, 95; in Canada, 724; in Cyprus, 90; in Germany, 509, 731; in India, 90; in Italian E. Africa, 95; in Italy, 580; in Japan, 790; in Libya, 507; in Poland, 168; in U.S.A., 375, 384, 660, 663; in U.S.S.R., 447, 584, 585; physiologic races of, 507, 509, 585, 731; revised register of physiologic races of, 299; *Tilletia caries* in relation to, 791; toxins in the host inhibiting, 791; varietal reaction to, 90, 95, 168, 384, 447, 509, 585, 660, 663, 724, 731, 790.
[Wheat], *Pullularia* on, in England, 809.
—, *Pythium* on, effect of, on rust infection, 165; occurrence in Canada, 165, 515; root development in relation to, 515.
—, — *arrhenomanes* on, in Canada, 449.
—, reactions to disease of Hindu Kush collections of, 660.
—, reclamation disease of, copper deficiency in relation to, 88, 240, 241; occurrence in Denmark, 88; in Holland, 240; in S. Australia, 163.
—, *Sclerotinia borealis* on, in Sweden, 298.
—, — *graminearum* on, in U.S.S.R., 582.
—, (?) *Sclerotium costantini* on, in France, 372.
—, *Septoria nodorum* on, in Holland, 240; in U.S.A., 661.
—, — *tritici* on, distinct from *S. graminum*, 297; occurrence in U.S.A., 297, 661.
—, *Tilletia caries* on, antagonism of, to *Erysiphe graminis*, 166; breeding against, 13, 447, 514, 661; control, 12, 14, 90, 94, 166, 301, 375, 605; effect of, on root development, 14; on yield, 661; factors affecting, 13, 166, 447; genetics of resistance to, 169, 170, 305; germination rate of strains of, 303; grass hosts of, 732; influence of, on susceptibility to *Puccinia*, 302; to *P. glumarum*, 300, 513; to *P. triticina*, 791; occurrence in Cyprus, 90; in France, 12, 13, 306; in Germany, 303, 513; 514; in New S. Wales, 169; in New Zealand, 94; in Poland, 166; in Rumania, 732; in Syria, 90; in Turkey, 303; in U.S.A., 14, 169, 170, 301, 375, 441, 661; in U.S.S.R., 447, 605; physiologic races of, 14, 169, 170, 305, 441, 732; statistical methods for experiments on, 169; studies on, 13, 305; translation of Prévost's memoir on, 306; varietal reaction to, 12, 13, 167, 169, 170, 303, 306, 447, 514. (See also *T. tritici* f. *intermedia* on.)
—, — *foetens* on, control, 14, 94, 170, 301, 375; effect of, on root development, 14; on yield, 661; factors affecting, 14; genetics of resistance to, 305; germination rate of strains of, 303; grass hosts of, 732; note on, 664; occurrence in Egypt, 170; in France, 305; in New Zealand, 94; in N. Africa, 13; in Rumania, 732; in Turkey, 301, 303; in U.S.A., 14, 301, 375, 441, 661,

664; physiologic races of, 441, 732; statistical methods for experiments in, 169; study on, 305; on partial infections of, 301; translation of Prévost's memoir on, 306; varietal reaction to, 305.
[Wheat, *Tilletia*] *indica* on, in India, 499.
—, — *tritici* f. *intermedia* on, in Turkey, 303.
—, *Typhula itoana* on, in Sweden, 298.
—, *Urocystis tritici* on, control, 170; effect of, on root development, 14; genetics of resistance to, 169; nutrition of host in relation to, 791; occurrence in Australia, 656; in Egypt, 170; in New S. Wales, 169, 373, 656; in U.S.A., 169; in Victoria, 791; physiologic races of, 169; varietal reaction to, 14, 169, 656.
—, *Ustilago nuda* on, inoculation experiments with, 792.
—, — *tritici* on, breeding against, 661; control, 96, 514; cultural study of, 96; detection of, by ultra-violet light, 663; effect of, on yield, 661; factors affecting, 447; inoculation experiments with, 792; occurrence in India, 585; in Italy, 447, 580; in Tunis, 514; in U.S.A., 660, 664; in U.S.S.R., 96; varietal reaction to, 447, 585.
— × rye hybrids, immune from rusts and smuts, 661.
Wood pulp, see Timber.

Xanthomonas, definition of the genus and list of species of, 659.
X-bodies in tobacco mosaic, 633; in tulip, 529.
'X' disease of peach in U.S.A., 38.
— — of *Prunus virginiana* in U.S.A., 39.
Xiphydria prolongata, (?) *Daldinia concentrica* on, in England, 26.
X-rays, use of, in virus studies, 44, 209, 211, 480; in studies on timber decay, 563.
'XT' fungus on cotton in the Sudan, 391.
Xylaria fusca on timber in U.S.A., 356.
— *polymorpha* on timber in U.S.A., 356.
— *thwaitesii* on rubber in Sumatra, 579.
Xylotrupes gideon in relation to orange 'foam' disease, 795.

Yams (*Dioscorea*), mosaic of, in Sierra Leone, 157.
Yeast, bakers', *Blastodendrion krausi* and *Candida albicans* in, in Italy, 27.
— filtrate, effect of, on growth of mycorrhizal fungi, 542.
Yew (*Taxus*), *Cryptocline taxicola* on, in Scotland, 75; *Gloeosporium taxicola* synonym of, 75.
—, *Gloeosporium taxi* on, in Scotland, 75.
—, *Physalospora gregaria* var. *foliorum* on, ascigerous stage of *Phyllostictina hysterella*, 75; occurrence in Scotland, 75.
—, *Sphaerulina taxi* on, in Scotland, 74; *Cytospora taxifolia* pycnidial form of, 74.

Zantedeschia aethiopica, *Cercospora richardiaecola* on, in S. Africa, 438.
Zea mays, see Maize.
Zinc, effect of, on *Rhizopus nigricans*, 337.
—, use of, against little leaf of fruit trees, 36; against sugar-cane mosaic, 623.
— arsenate, use of, as a timber preservative, 220.
— arsenite, use of, against *Sclerotinia laxa* on apricot, 120.
— chloride, use of, against pine rosette, 643; against staining of wood pulp, 363; as a timber preservative, 220, 426, 493, 563, 830.
— —, chromated, use of, as a timber preservative, 563.
— compounds, use of, to disinfect pea seed, 495.
— deficiency in citrus in Puerto Rico, 308; in U.S.A., 518; in crops in Western Australia, 547; in the potato, 545.
— 'mercury amalgam', use of, against *Corticium solani* on potato, 578.
— -meta-arsenite, use of, as a timber preservative, 220.
— oxide, use of, against damping-off, 332; against *Pythium* and *Rhizoctonia*, 440.
— salts, use of, against little leaf diseases, 43.
— silicate, use of, against *Cladosporium fulvum* on tomato, 784.
— sulphate, effect of, on *Corticium*, *Curvularia*, *Fusarium*, and *Helminthosporium* on wheat, 97; on *Phymatotrichum omnivorum*, 176; of applications on oats and potato crops, 547.
— —, use of, against citrus mottle leaf, 103, 308, 376; against *Coccomyces hiemalis* on cherry, 691; against little leaf of apple, 502, 688; of fruit trees, 36, 261; of peach and pear, 187.
— — and lime paste, use of, against gummosis and psorosis of citrus, 518.
— tacks, use of, against little leaf of fruit trees, 36, 261.
Zingiber mioza and *Z. officinalis*, see Ginger.
Zinnia, *Corticium solani* on, in New S. Wales, 501.
—, cucumber virus 1 affecting, in Germany, 509.
—, *Macrophomina phaseoli* on, in Sierra Leone, 157.
—, (?) *Macrosporium caudatum* on, in England, 654.
— *elegans*, cucumber virus 1 affecting, in Germany, 803.
— —, *Pseudoperonospora cubensis* can infect, 86.
Zizania aquatica, *Claviceps purpurea* on, in Canada, 725.
Zostera marina, dying-off of, in British waters, 334.
— —, *Labyrinthula* on, in British waters, 334; in Holland, 334.
— —, *Ophiobolus halimus* on, in British waters, 334.
Zygomycetes, longevity of, 703.
Zygorrhynchus moelleri and *Z. vuillemini* in soil in Scotland, 137.